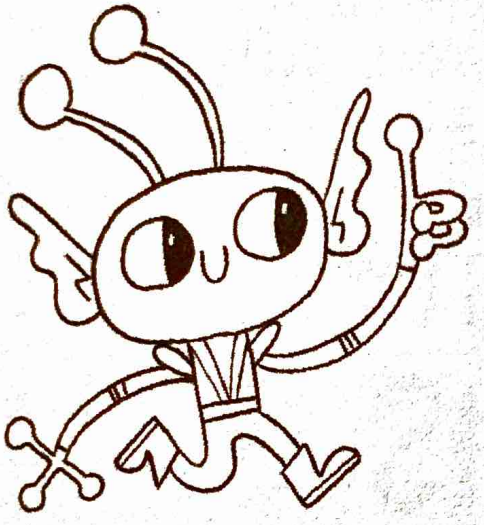
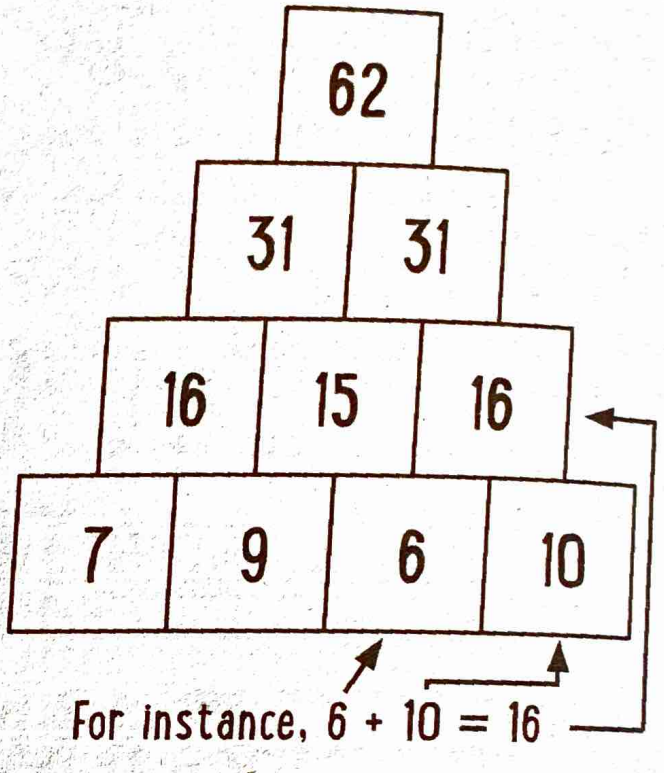
MATHS PUZZLE 1

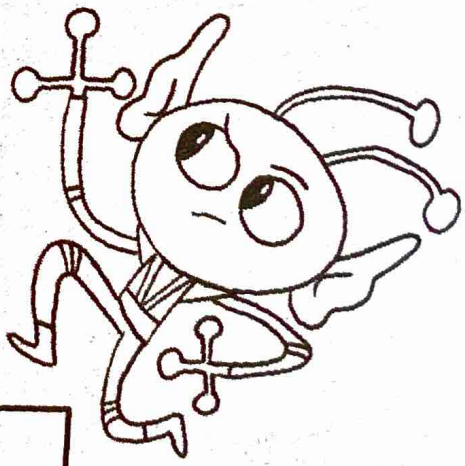
TIME .....

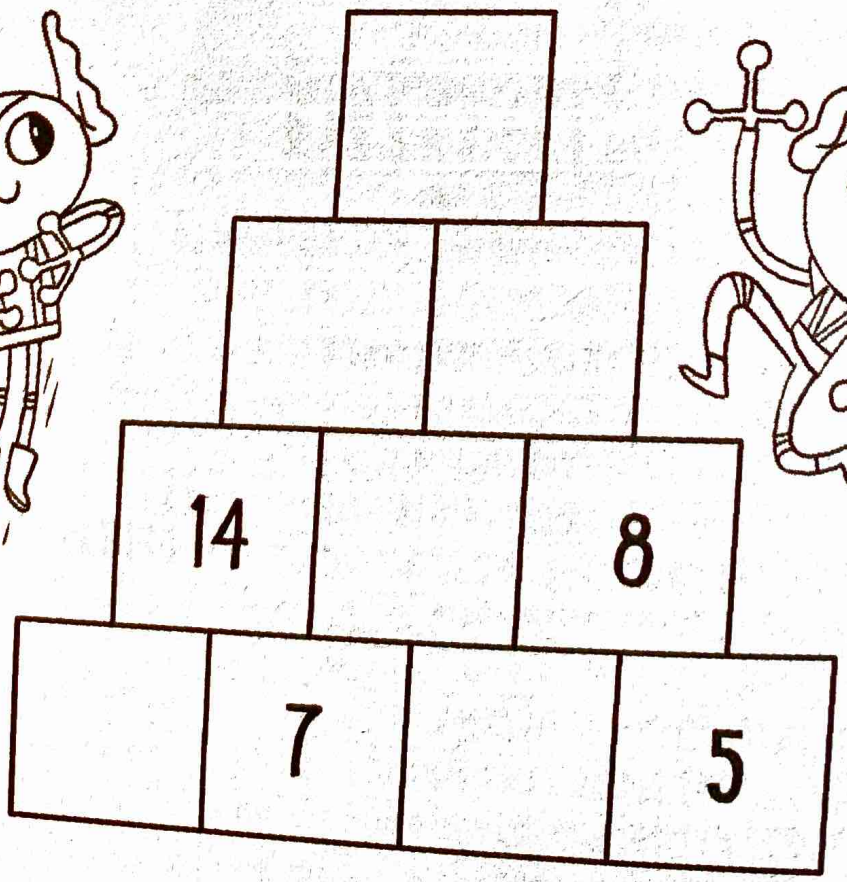
Can you conquer the number pyramid by making sure that every block is equal to the sum of the numbers on the two blocks directly beneath it?

Here's a finished example:







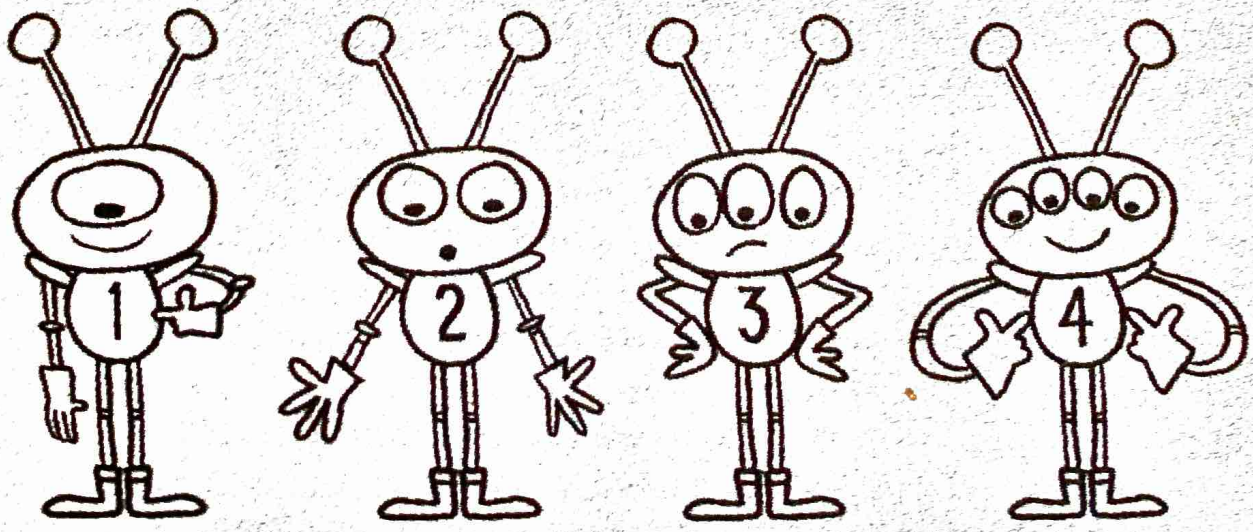


TIME .....

MATHS PUZZLE 2

Can you place the digits 1 to 4 once each into the four empty squares so that each of the mathematical equations is correct? Two equations read left-to-right, and two read top-to-bottom.

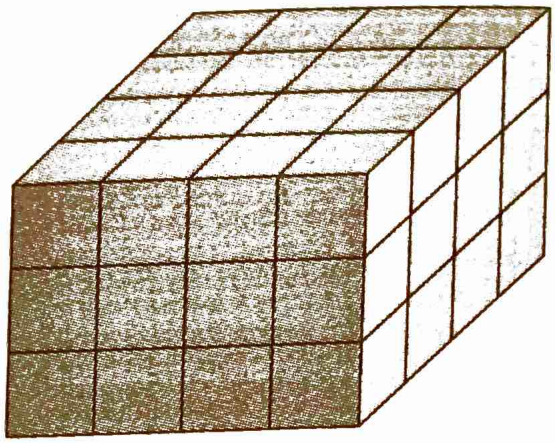
	×		=	4
×		+		
	+		=	5
=		=		
2		7		



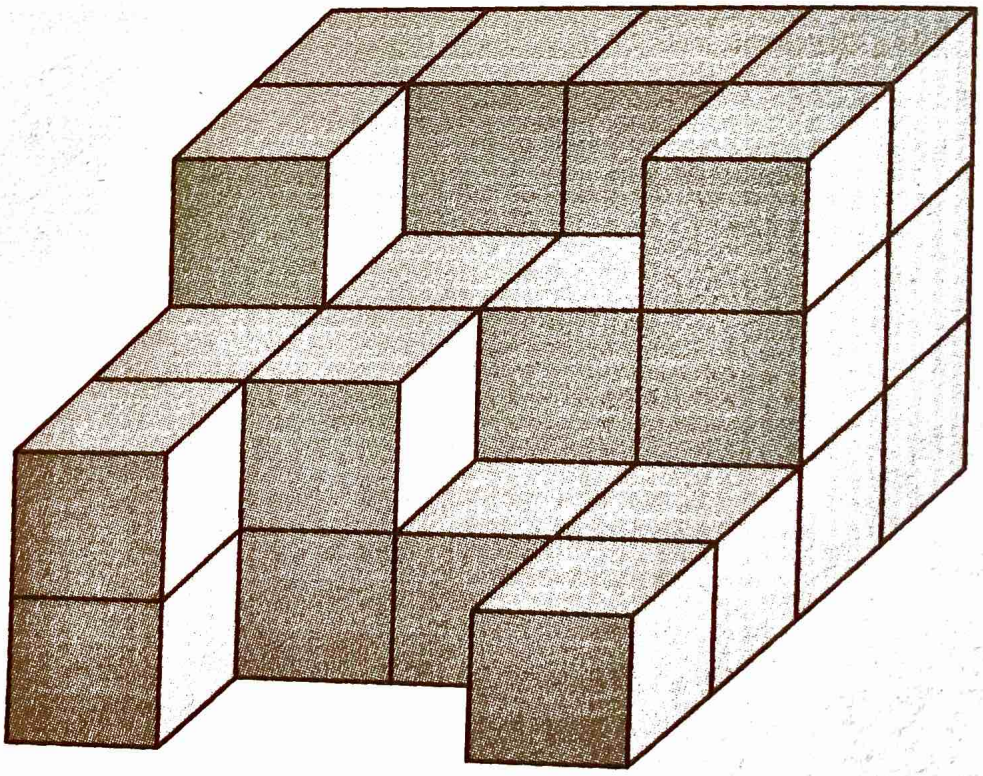
MATHS PUZZLE 3

TIME .....

Original stack



How many cubes can you count in the picture below? It started off as the 4x4x3 arrangement of cubes shown above, but someone has been stealing from the stack. None of the cubes are 'floating' in the air, so if there is a cube on a layer above the bottom one then you can be certain that all of the cubes beneath it are still there too.



Answer: There are ..... cubes

TIME .....

MATHS PUZZLE 4

Can you work out which number should come next in each of these mathematical sequences?

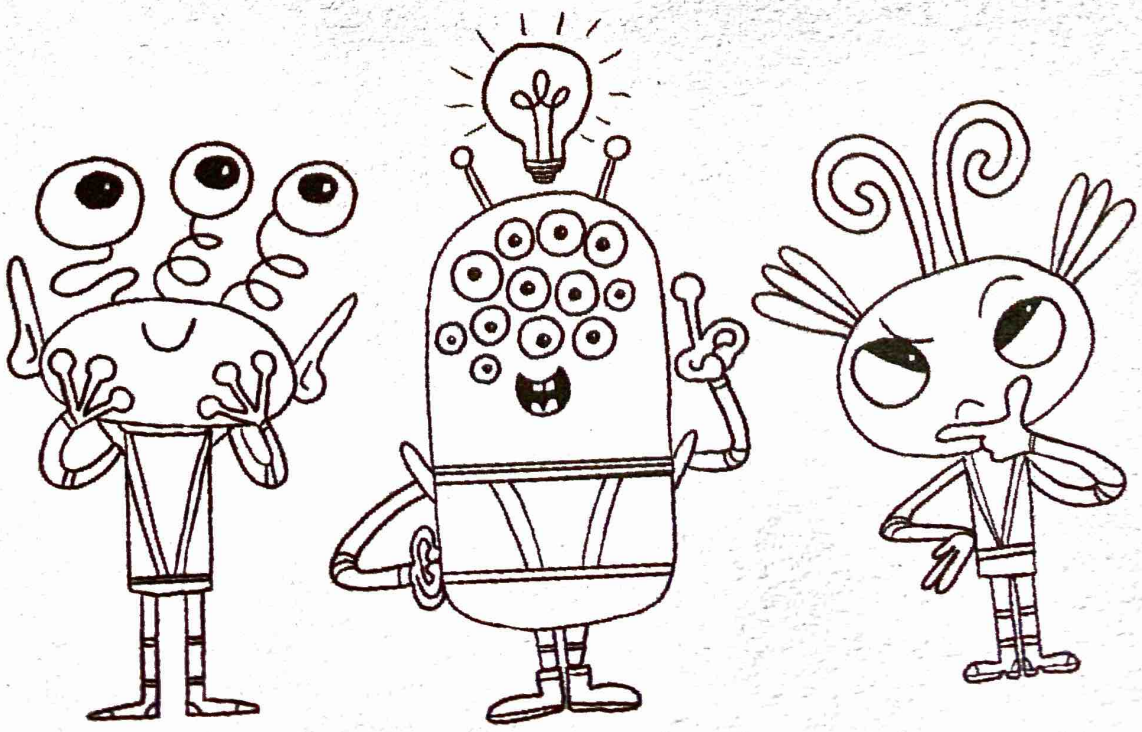
a) 29 27 25 23 21 19 .....

b) 23 26 29 32 35 38 .....

c) 128 64 32 16 8 4 .....

d) 7 13 19 25 31 37 .....

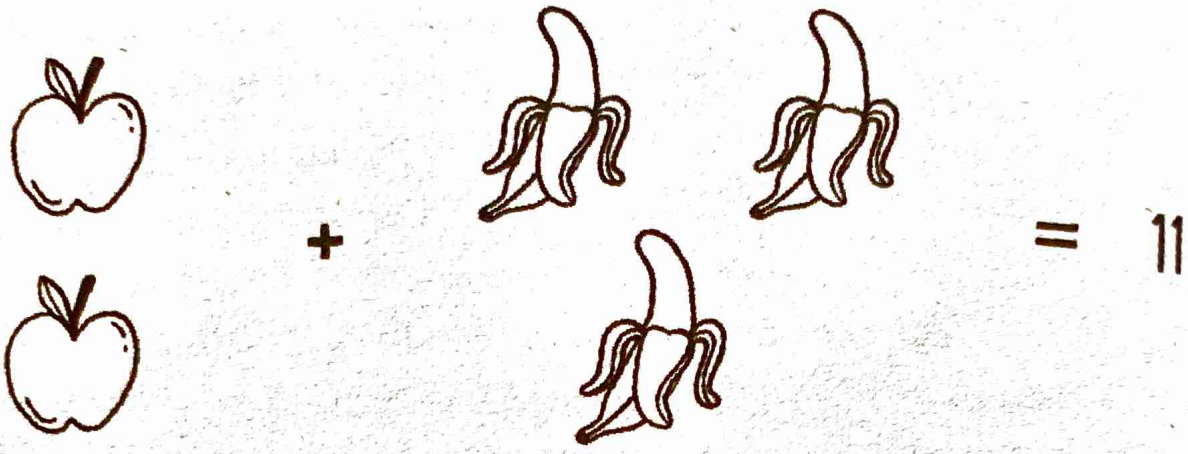
e) 7 8 10 13 17 22 .....

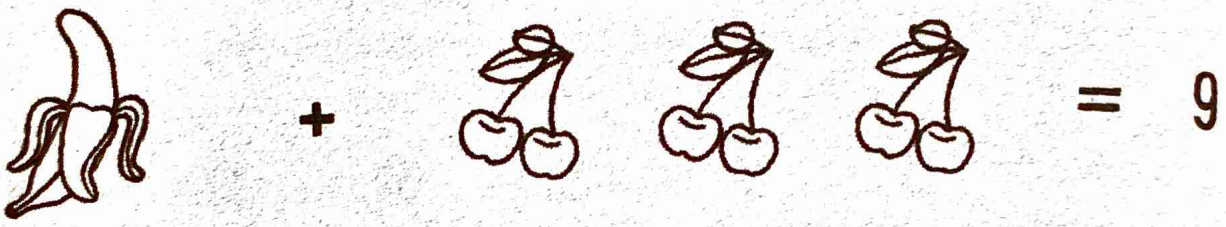


MATHS PUZZLE 5

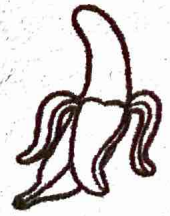
TIME .....

Looking at these picture equations, can you work out the value of each of the fruits?





Apple = ...



Banana = ...

Cherry = ...

TIME .....

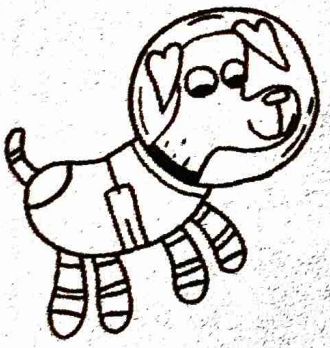
MATHS PUZZLE 6

Can you use each of these mathematical operations to join a pair of numbers?

+9 ×2 ×3 ×5

Pick two of the numbers below that can be joined by one of the mathematical operations above. Each number, and each operation, should be used only once. Note that there are multiple ways of joining some pairs, but only one way of doing it which allows everything to be used just once.

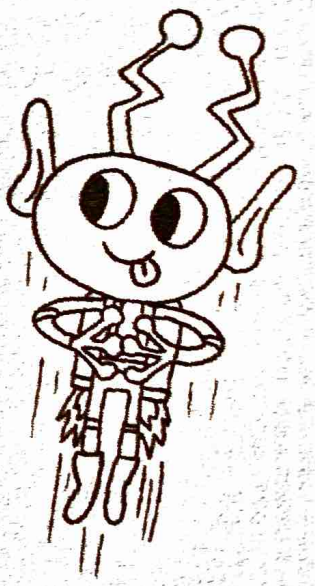
For example, you could use the ×5 operation to join 5 and 25, since $5 \times 5 = 25$.



12 9 5

4 13

3 25 6



Write your answers below:

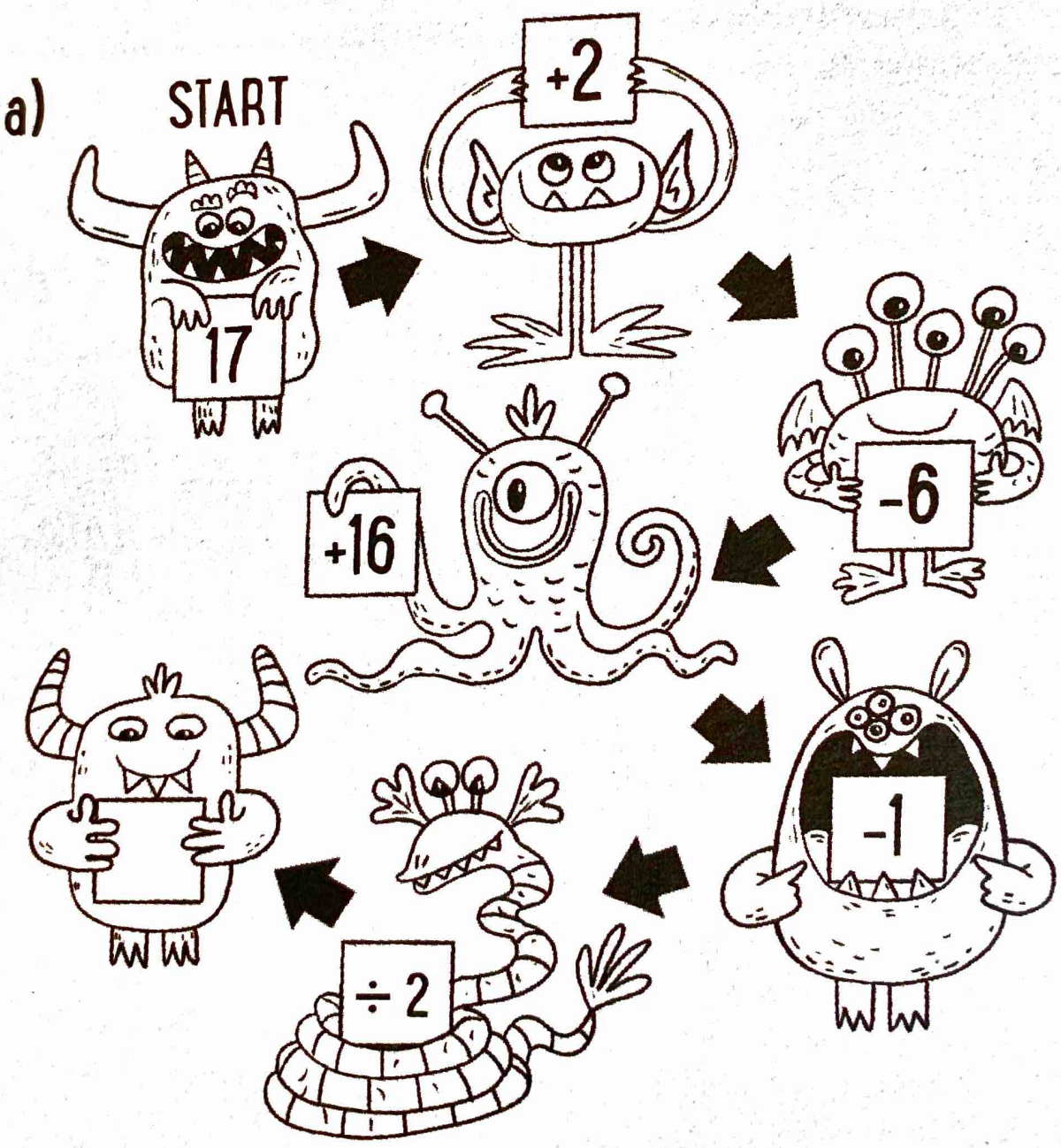
MATHS PUZZLE 7

These space monsters are marvellous at maths. They have created some mental-arithmetic puzzles for you to solve.

Each of these monster chains is giving you some mathematical instructions. Begin with the number at the **START** of each sequence, and then apply each mathematical operation in turn until you reach the end of the row. Try to do all of the maths in your head, without making any written notes.

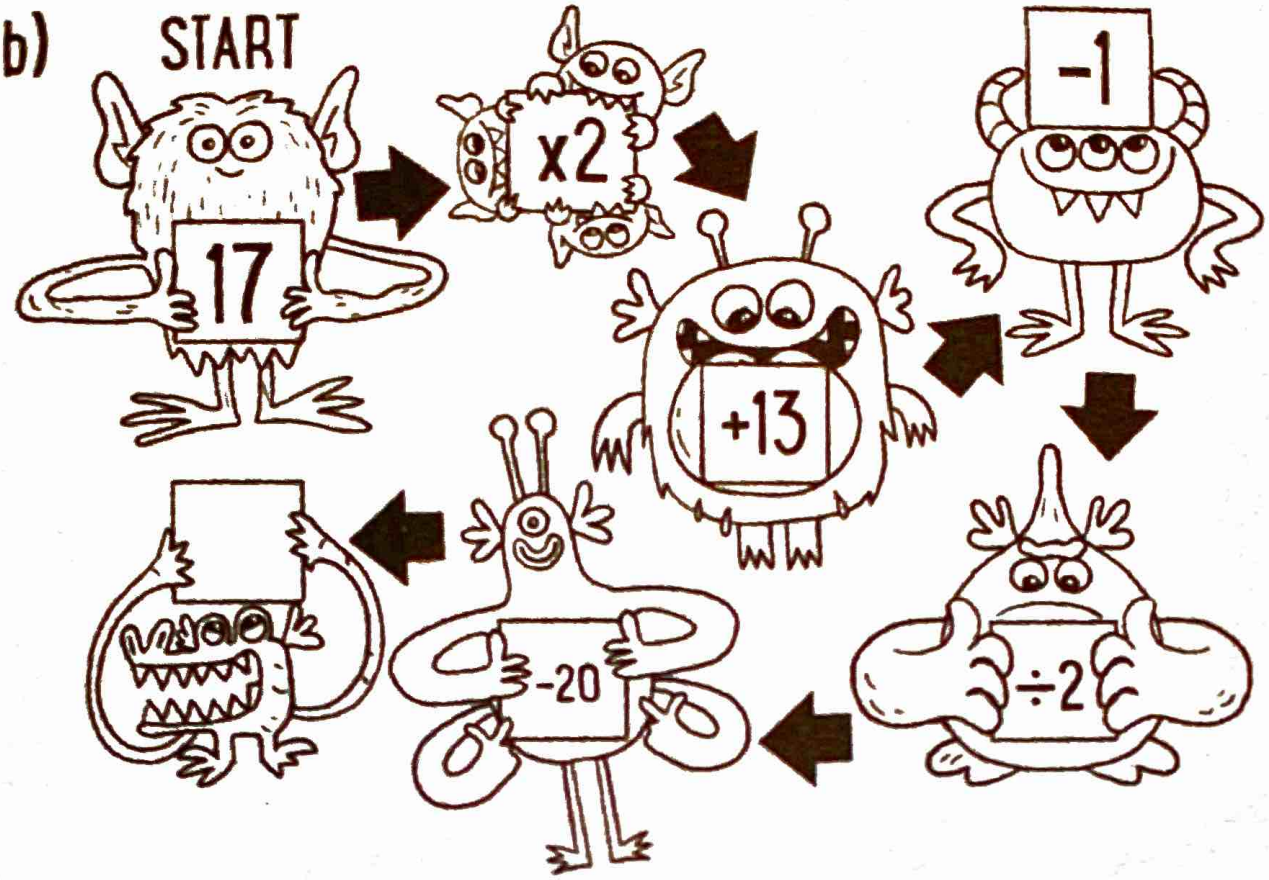
Write your answer in the box at the end of each sequence.

a)

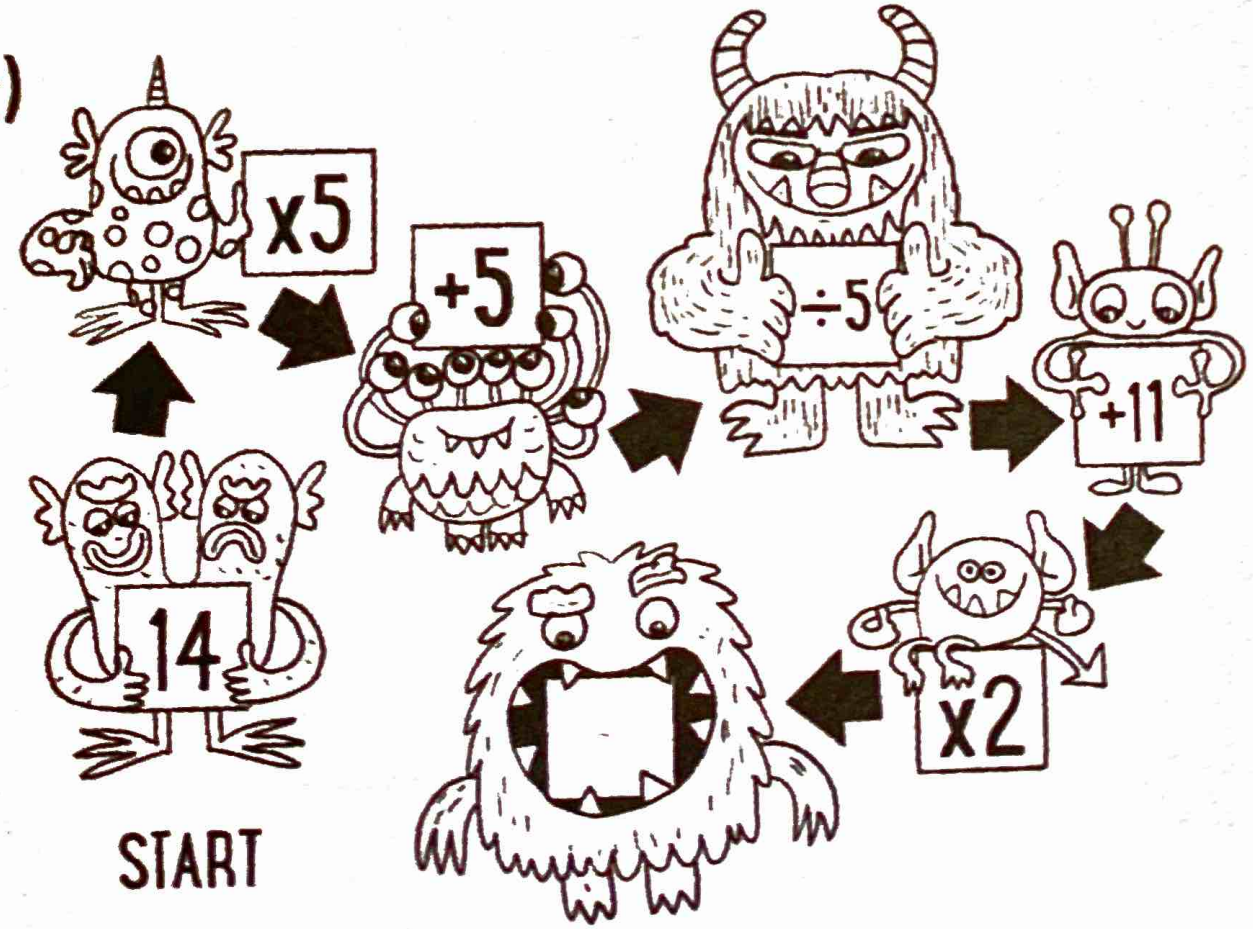


TIME .....

b)



c)

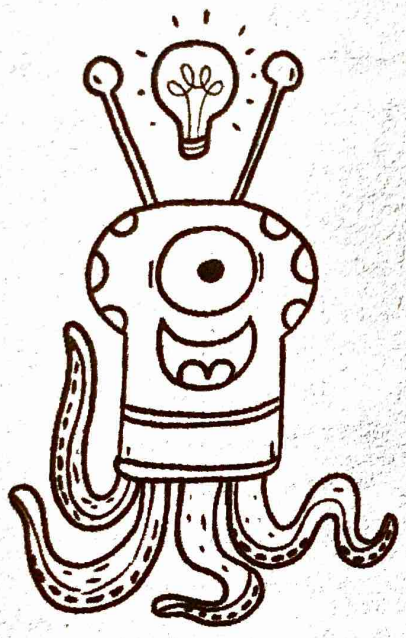


MATHS PUZZLE 8

TIME .....

To solve this frame sudoku puzzle, place the numbers 1 to 4 once each into every row, column and bold-lined 2x2 box, just like in regular sudoku. The numbers outside the grid tell you the sum of the two nearest numbers in the corresponding row or column.

Here's a finished example:



	5	5	5	5	
3	1	2	3	4	7
7	4	3	2	1	3
4	3	1	4	2	6
6	2	4	1	3	4
	5	5	5	5	

For instance, 3 + 2 = 5

	5	5	6	4	
3					7
7				1	3
7	4				3
3					7
	5	5	4	6	

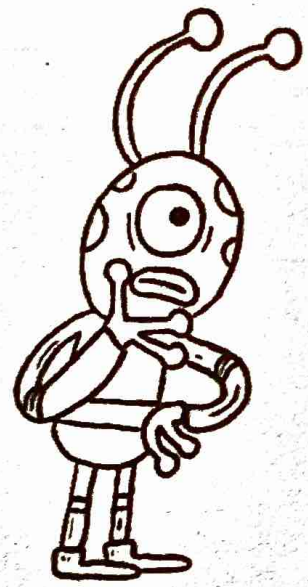
TIME .....

MATHS PUZZLE 9

By adding together some of the numbers below, can you make each of the totals listed in the column?

4 5 7 10 11 12

You can use each number only once per total. You could form 18 by adding 7 + 11, for example, but not by adding 4 + 4 + 10.



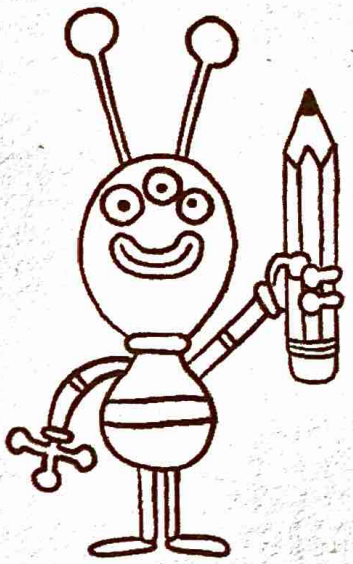
Totals:

18

24

31

35



Write your answers below:

18 = ...

24 = ...

31 = ...

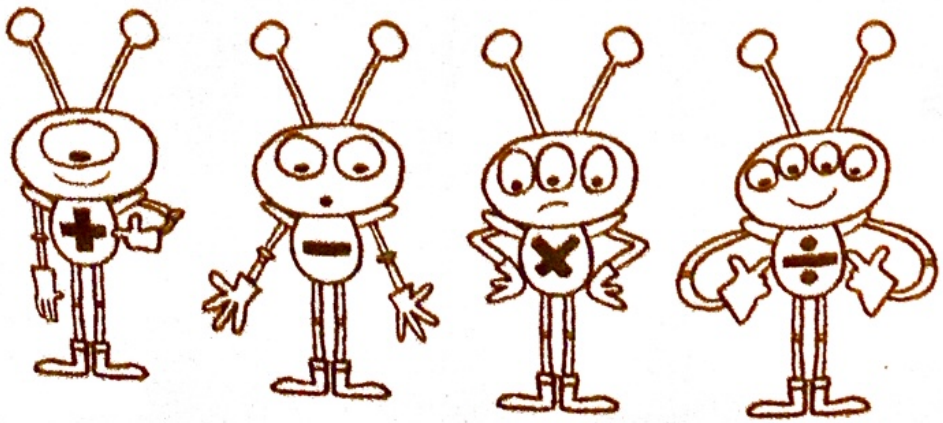
35 = ...

MATHS PUZZLE 10

TIME .....

Place a mathematical operation sign (−, ×, ÷ and +) in each empty box on the page so that every equation is correct.

12	□	11	= 132	4	□	4	= 16
42	□	8	= 34	2	□	3	= 5
120	□	12	= 10	4	□	12	= 48
72	□	8	= 9	12	□	12	= 144
17	□	38	= 55	3	□	10	= 30
56	□	5	= 61	8	□	6	= 48
32	□	8	= 4	19	□	43	= 62



TIME .....

MATHS PUZZLE 11

Can you form each of the given totals, by choosing one number from each ring of this dartboard?

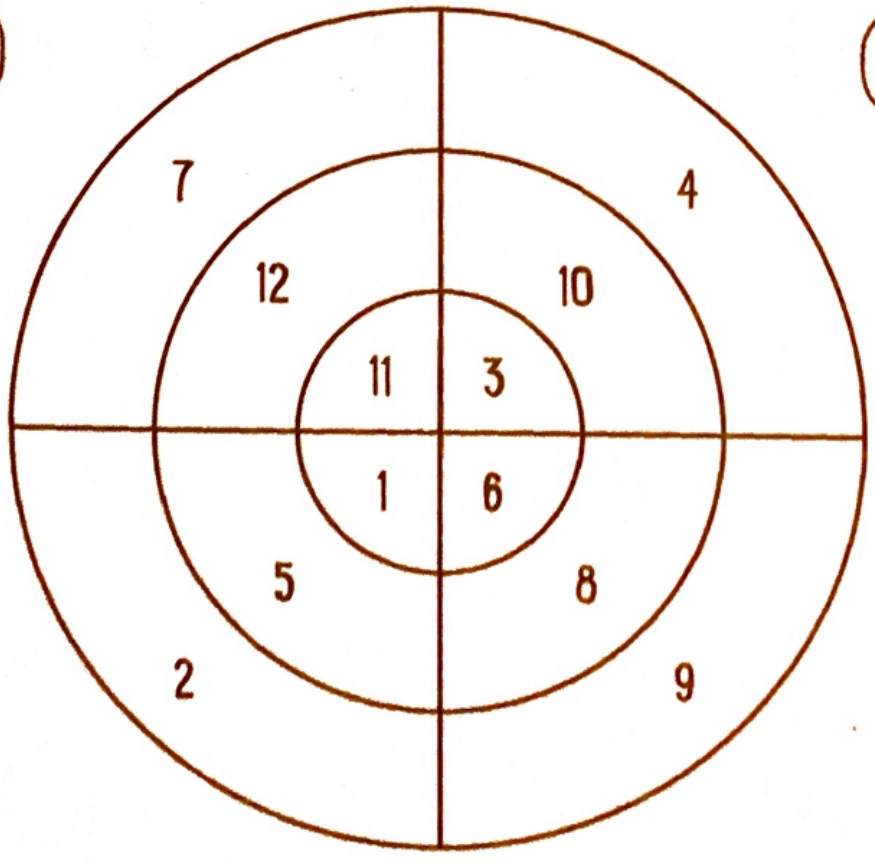
For example, you could form a total of 11 by picking 1 from the innermost ring, 8 from the middle ring and 2 from the outermost ring. You can't pick from the same ring more than once per go.

Totals:

12 = ...

24 = ...

26 = ...

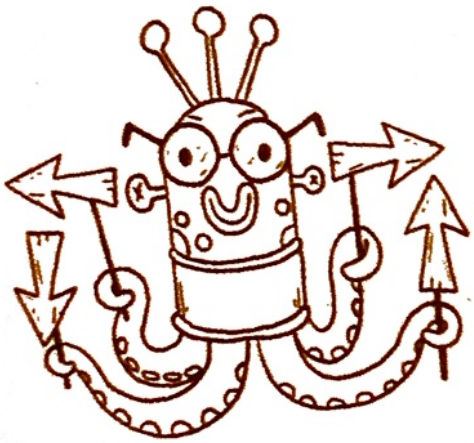


MATHS PUZZLE 12

TIME .....

Solve this Futoshiki puzzle by placing the numbers 1 to 4 once each into every row and column. You must obey the 'greater than' signs. These are arrows which always point from the bigger number to the smaller number of a pair. For example, you could have '2 > 1', or '3 > 1', or '4 > 1', since 2, 3 and 4 are greater than 1, but '1 > 2' would be wrong because 1 is not greater in value than 2.

Here's a finished example:



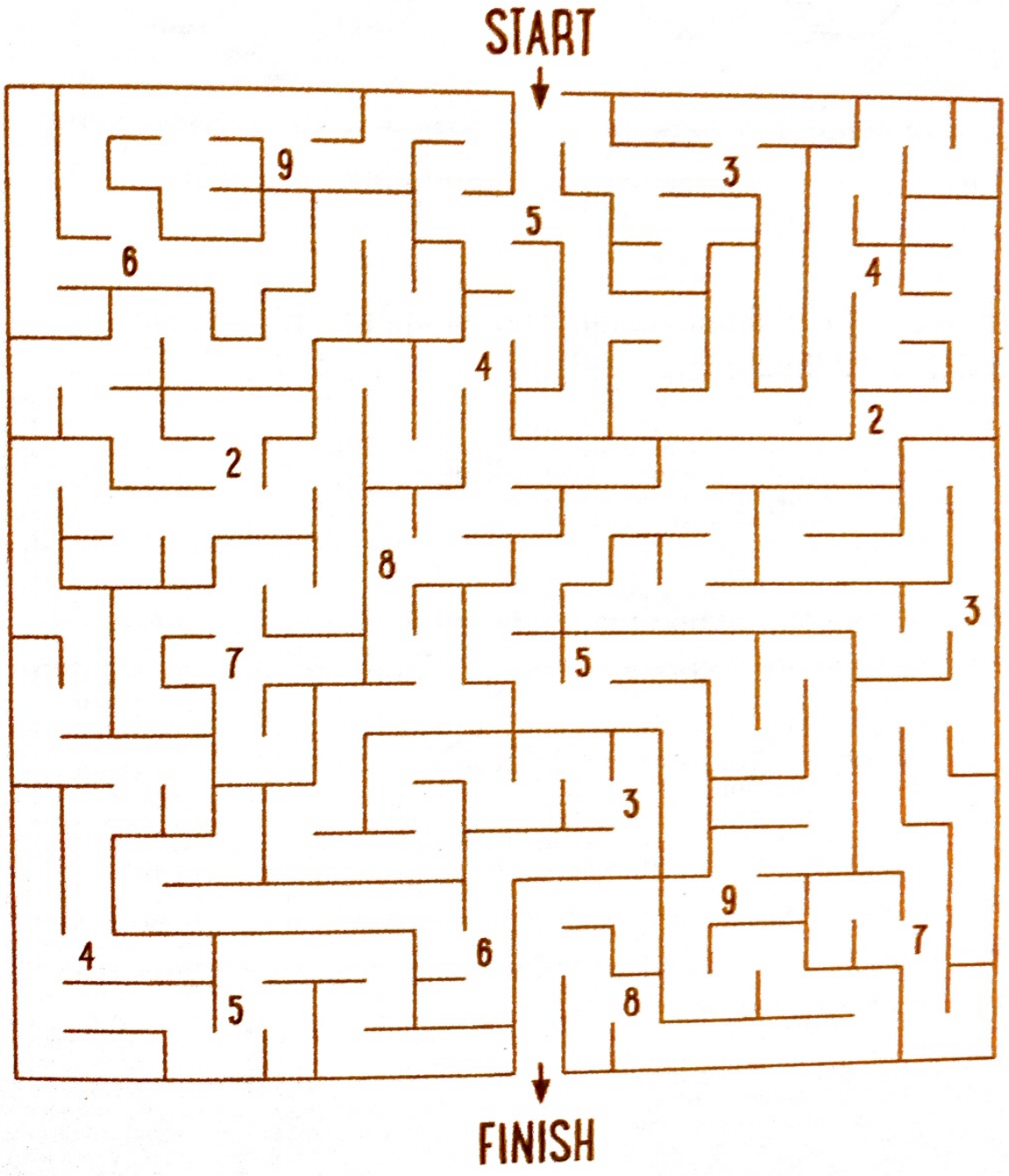
4	3	2	1
3 <	4	1 <	2
2 >	1	4	3 ∧
1	2 <	3	4

3	>		
<	2	>	
∧			
<		1	
			∨
			2

TIME .....

MATHS PUZZLE 13

Can you complete this number-crunching maze and calculate the correct total? Begin by finding a route from the entrance at the top of the maze to the exit at the bottom. Then, add up the values on the direct route from the entrance to the exit, ignoring any dead ends you previously travelled along.



Answer: The total is .....

MATHS PUZZLE 14 →

In the distant land of Distantia they have five different values of coin, as shown below, and their currency is the catchily named Distantian pence.

Assuming that you have as many of each value of coin as you might need, answer the following questions:

a) What is the minimum number of coins you can use to spend a total of 46 Distantian pence?

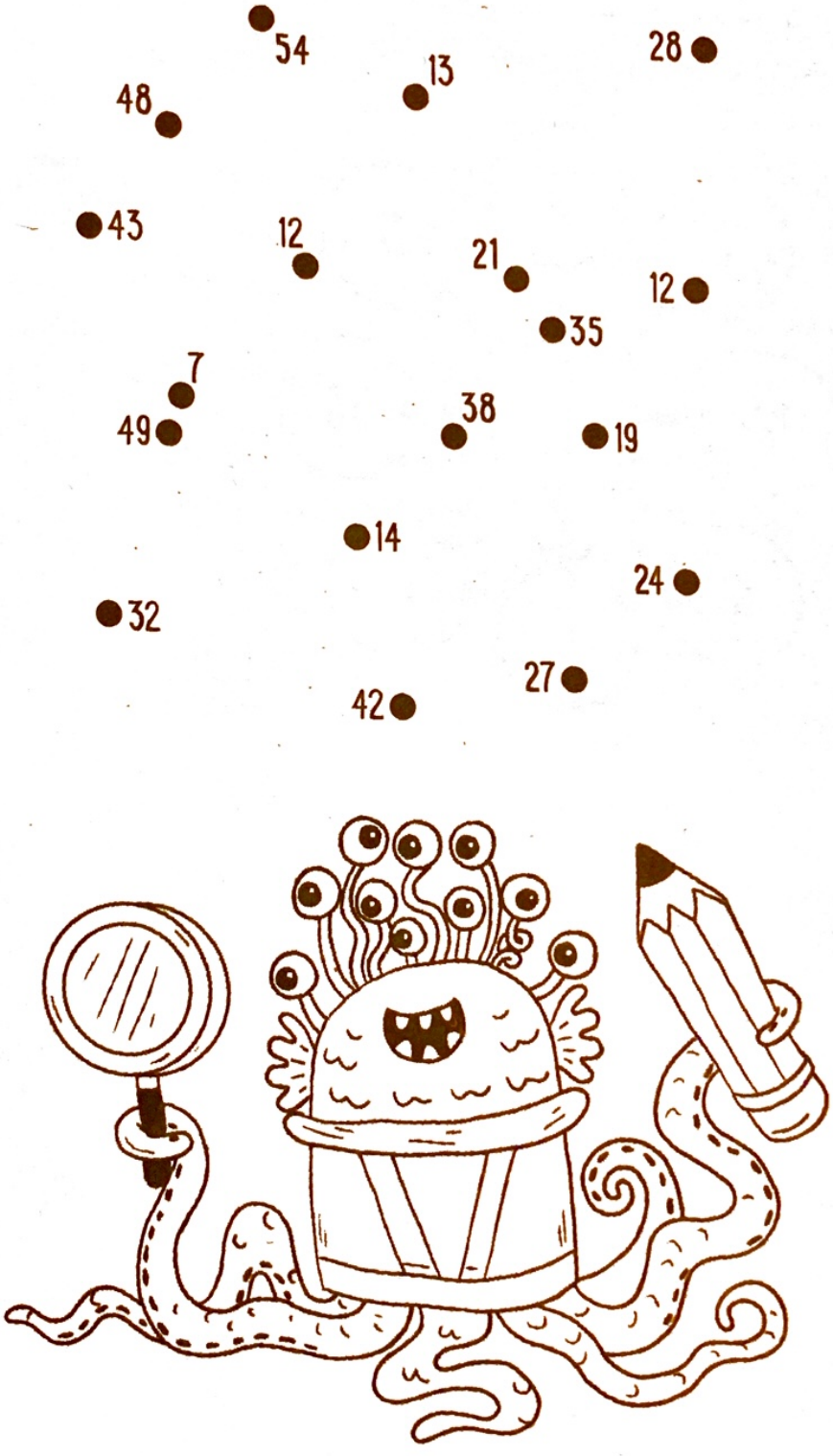
b) If you use no more than two of any value of coin, what is the maximum number of coins you can use to spend 67 Distantian pence?

c) If you buy something that costs 57 Distantian pence, what is the minimum number of coins you could receive as change from a 100 Distantian pence note?

TIME .....

MATHS PUZZLE 15

Join multiples of 7 in increasing numerical order to reveal a hidden picture – you'll definitely know if you're correct once you've solved it!

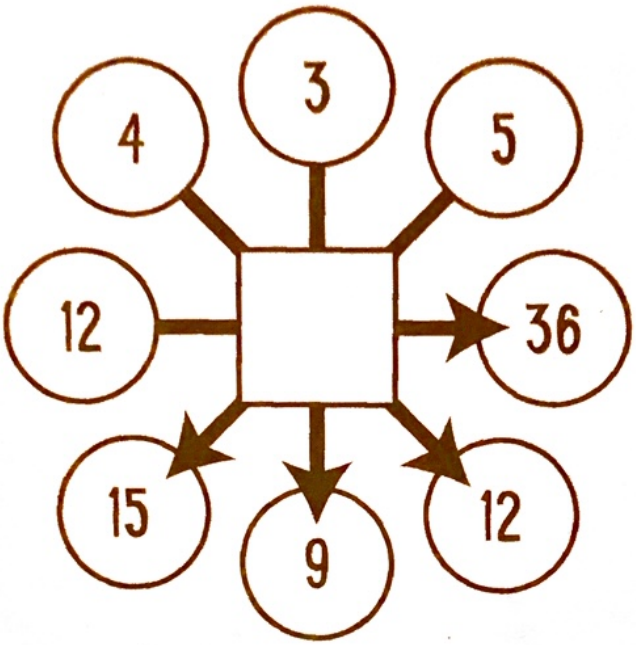


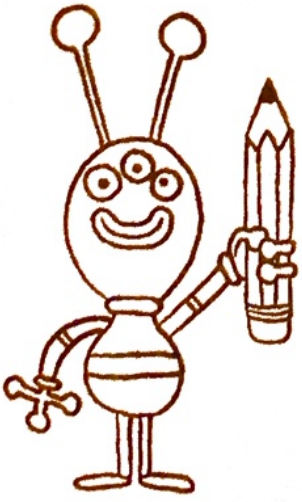
MATHS PUZZLE 16

TIME .....

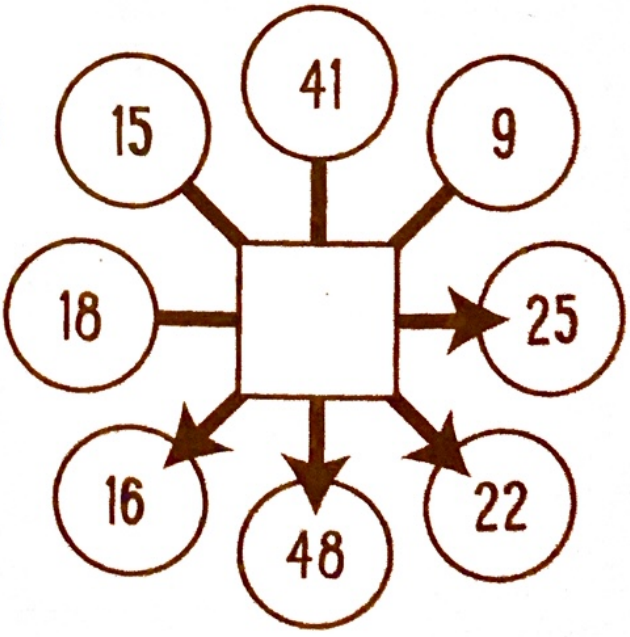
Can you work out what is going on in these mathematical machines? In each machine, a hidden mathematical operation is taking place, converting one number to the other. For example, in puzzle a), what operation could convert 4 to 12, 3 to 9, 5 to 15, and 12 to 36, as shown by the arrows? Write your answer for each puzzle in the square in the centre.

a)





b)

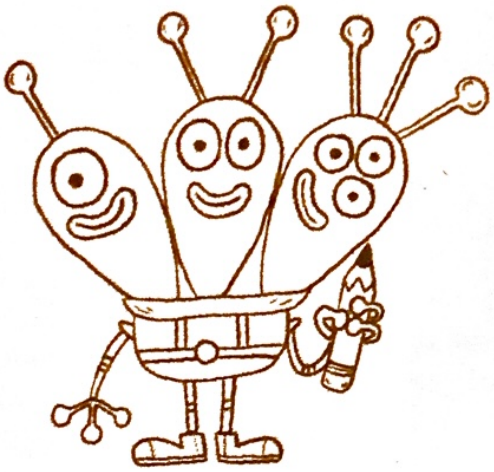


TIME .....

MATHS PUZZLE 17

To solve this Calcudoku puzzle, place 1 to 3 once each into every row and column. You must place these numbers so that the values in each bold-lined region of grid squares add up to the small number printed in the top left-hand corner of the region.

Here's a finished example:



Numbers 1, 2 and 3 appear once in each column and each row

3+ 1	5+ 3	2
2	1+ 1	4+ 3
5+ 3	2	1

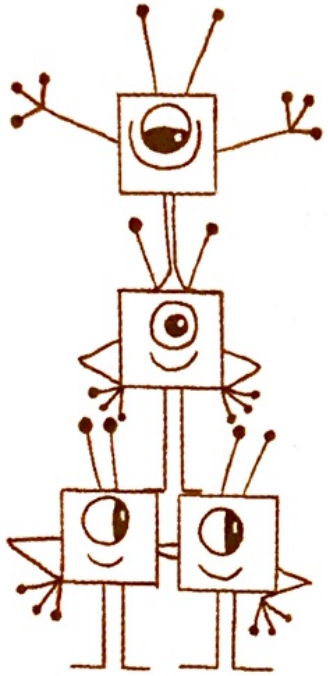
The numbers in each bold segment add up to equal the small number in the corner. For instance, 3 + 2 = 5 in this bold segment

3+		10+
	5+	

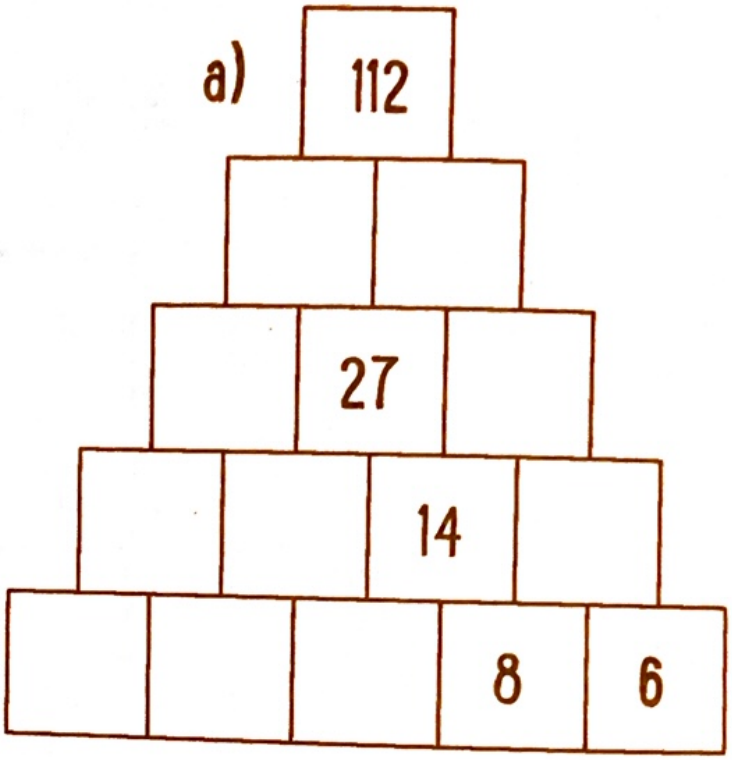
MATHS PUZZLE 18

TIME .....

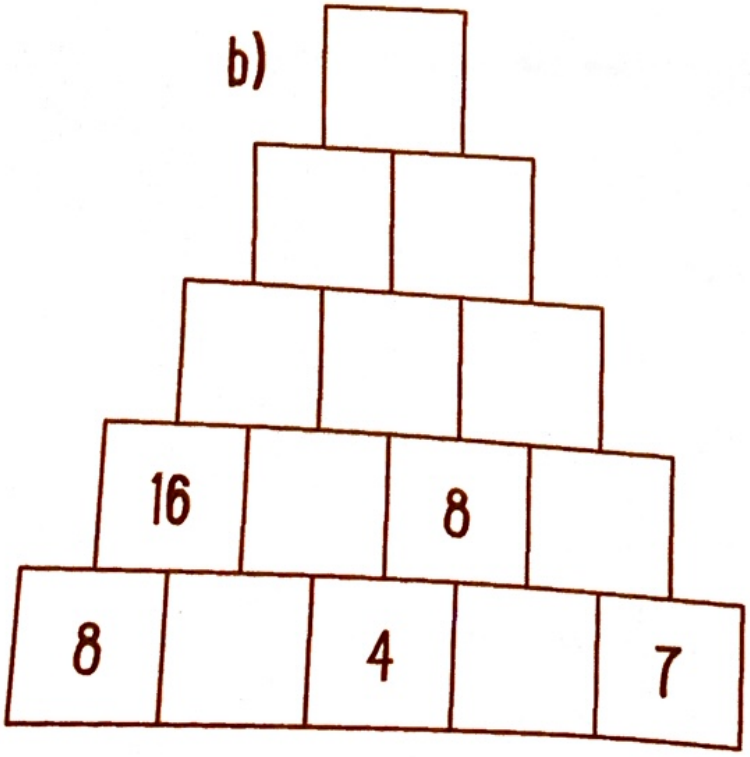
Can you solve these perplexing pyramid puzzles by making sure that every block is equal to the sum of the numbers of the two blocks directly beneath it?

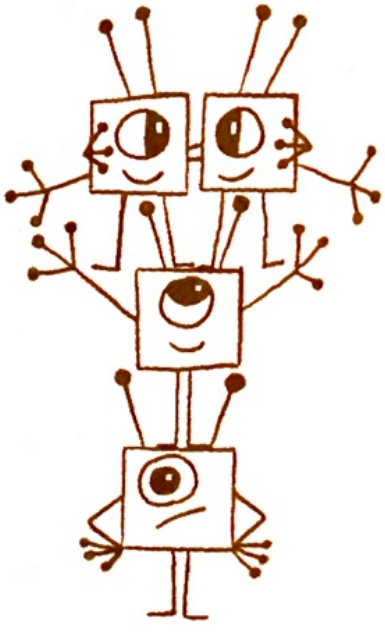


a)



b)



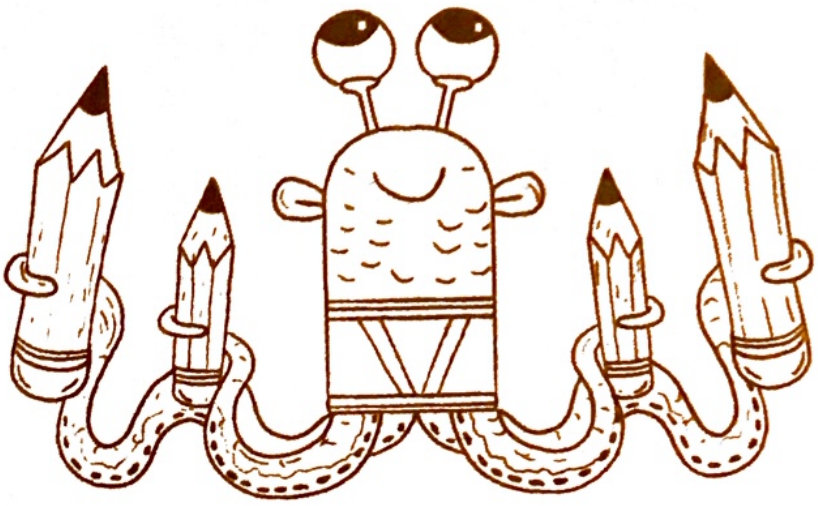


TIME .....

MATHS PUZZLE 19

Can you complete each of these mathematical problems by writing the correct result in each empty box?

14 + 45 = ☐	95 - 20 = ☐
9 + 11 = ☐	28 - 20 = ☐
51 + 26 = ☐	36 + 10 = ☐
16 + 91 = ☐	10 × 6 = ☐
18 × 9 = ☐	46 - 19 = ☐
77 + 13 = ☐	77 - 28 = ☐
8 × 11 = ☐	12 × 10 = ☐



MATHS PUZZLE 20 →

TIME .....

Remove exactly one digit from each of the following incorrect equations so that they become correct.

For example, 12 + 3 = 4 would be correct if you deleted the '2', so as to read 1 + 3 = 4.

$$3 \times 17 + 4 = 25$$

Answer: .....

$$12 + 23 + 34 = 48$$

Answer: .....

$$36 + 43 + 25 = 84$$

Answer: .....

$$10 \times 12 \times 14 \times 16 \times 18 = 0$$

Answer: .....

TIME .....

MATHS PUZZLE 21

Can you solve each of these number anagrams? The aim is to rearrange the numbers and the mathematical operators in order to result in the given value. You can use as many brackets as you like. Remember, operations in brackets should always be completed first.

For example, given 1, 2, 3, + and ×, you could reach a total of 9 with (1 + 2) × 3 = 9.

a)

3 4 7 + ×

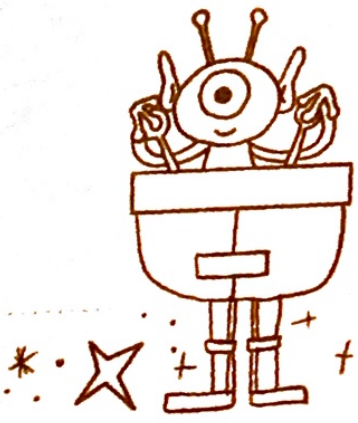
Result = 49

Answer: .....

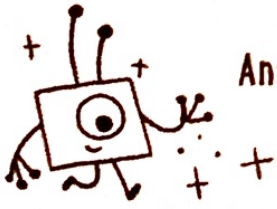
b)

1 4 5 − ×

Result = 15



Answer: .....



MATHS PUZZLE 22

When it's 1pm in the UK, it's a different time in most other countries due to the varying time zones of the world. Time zones are needed because different countries face the sun at different times, so each country's time zone is chosen so that midday in that country is fairly close to the middle of their daylight hours.

Here are four time zones:

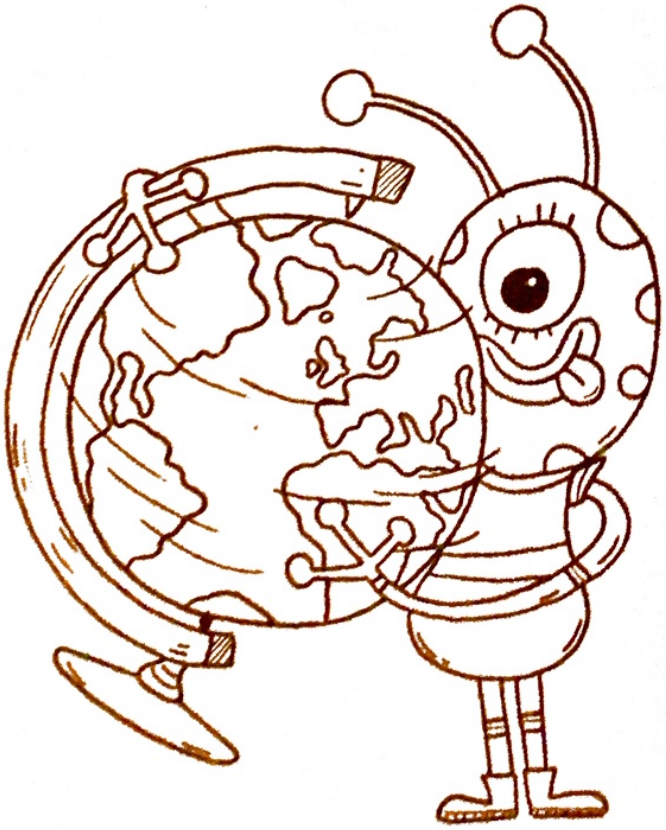
Argentina: GMT -3 hours

Madagascar: GMT +3 hours

UK: GMT +0 hours

India: GMT +5:30 hours

So, for example, when it's midnight in the UK, it's 5:30am in India.



GMT stands for Greenwich Mean Time. It's used as a benchmark against which to measure other time zones.

TIME .....

Use these time zones to answer the following questions:

a) What time is it in the UK when it's 4:30pm in Argentina?

.....

b) When it's midday in India, what time is it in the UK?

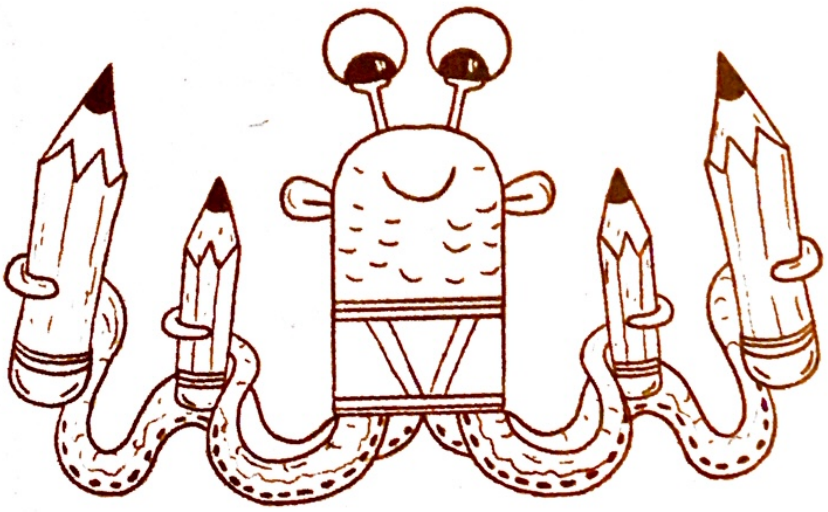
.....

c) What time is it in Madagascar when it's 8:20pm in Argentina?

.....

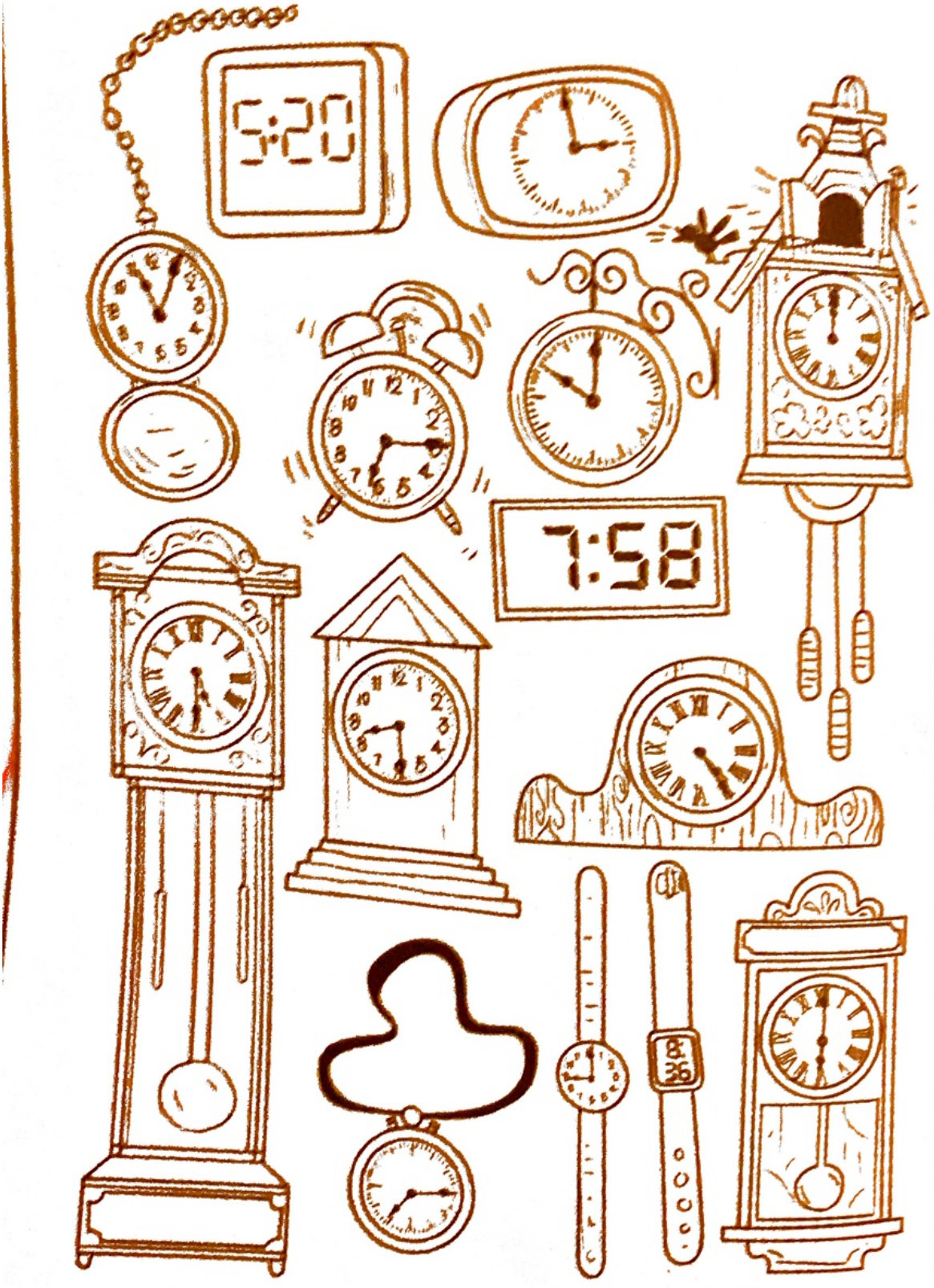
d) What time is it in India when it's 10:45pm in Argentina?

.....

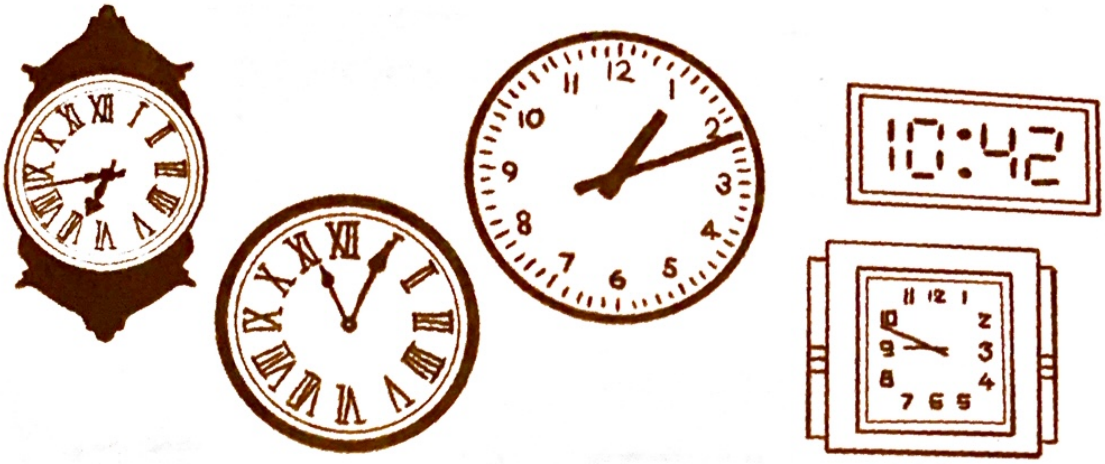


MATHS PUZZLE 23

Tick, tock ... tick, tock ... take a look at all of these clocks.
Can you solve the time-based questions on the opposite page?



TIME .....



a) How many clocks show a time that is thirty minutes past an hour?

.....

b) There is one time that is shown on two different clocks. What is that time?

.....

c) How many clocks can you find that show a time between 7 o'clock and 8 o'clock?

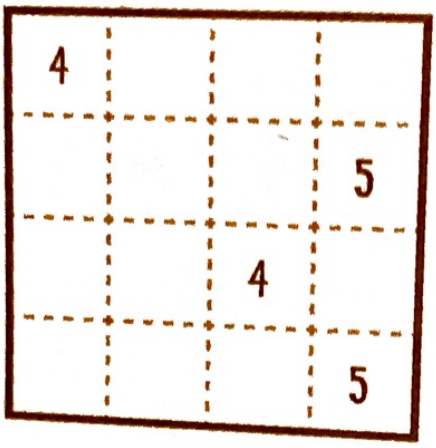
.....

MATHS PUZZLE 24

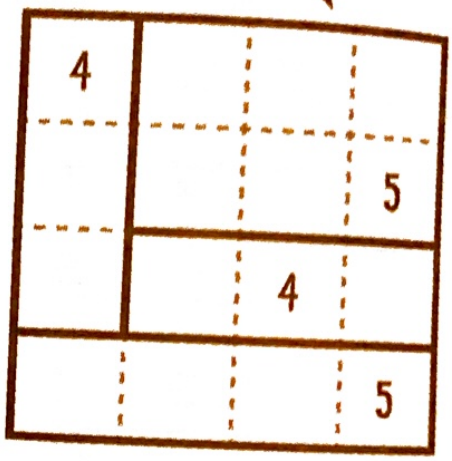
TIME .....

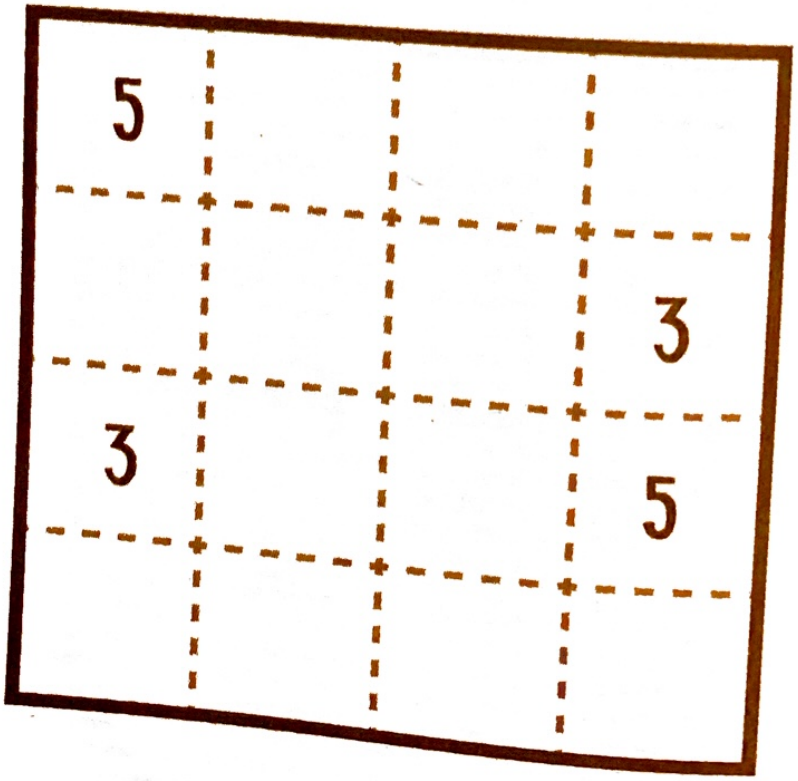
To solve this puzzle, draw lines along some of the gridlines in order to divide the grid up into a set of rectangles. Each number should be inside exactly one rectangle, and the sum of the width plus height of the rectangle must be equal to the value of that number.

Here's an example to show you how the puzzle works:



This rectangle, for instance, is 2 squares high by 3 squares wide, to make 2 + 3 = 5



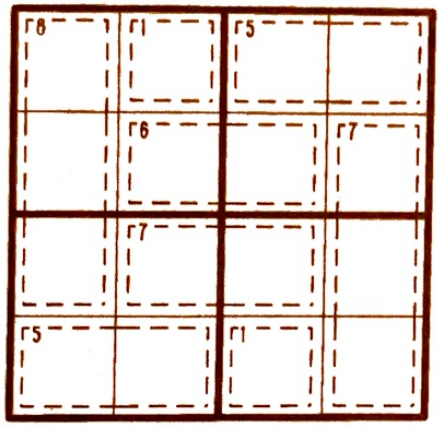


TIME .....

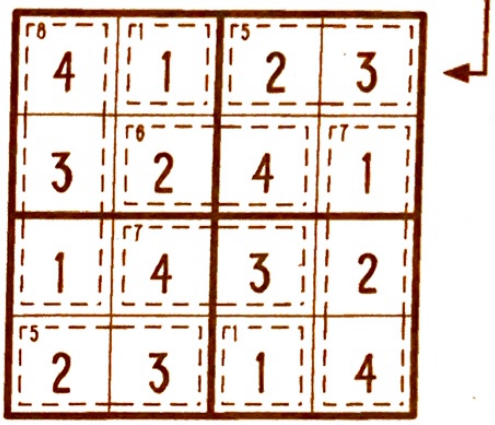
MATHS PUZZLE 25

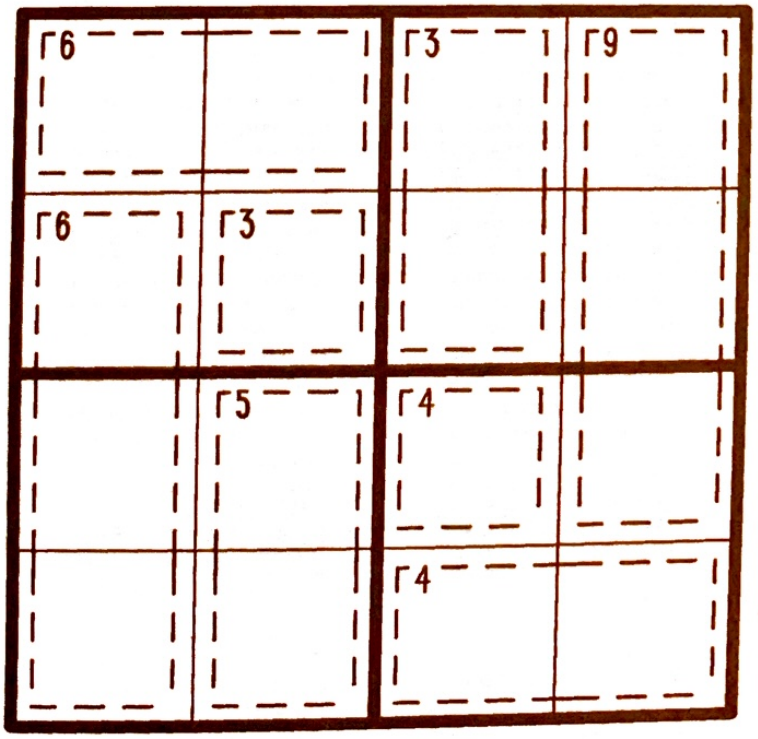
This 'killer sudoku' puzzle is a variation on regular sudoku. Not only must you place 1 to 4 once each into every row, column and bold-lined 2x2 box, but you must also place the numbers so that each dashed-lined region of grid squares adds up to the small number printed in the top left-hand corner of that region.

Here's an example to show you how the puzzle works:



In this dashed-lined area, for instance, 2 + 3 = 5





MATHS PUZZLE 26

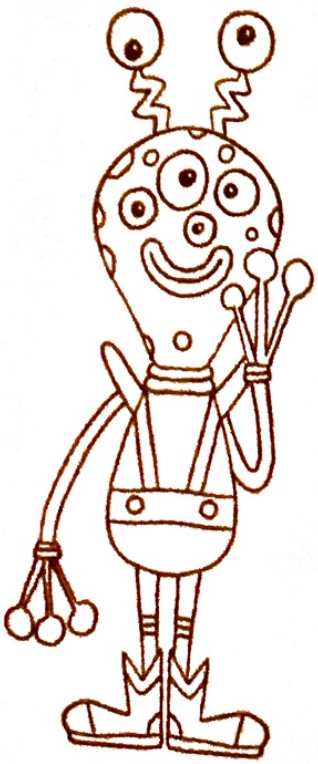
TIME .....

Amelia, Bella and Connor all share the same birthday, and on their most recent birthday Connor made the following observations:

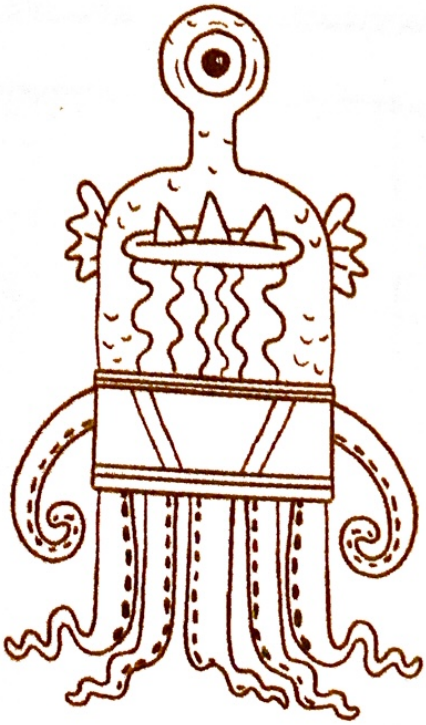
- Amelia is twice as old as I am now
- Bella is closer in age to Amelia than I am in age to Bella
- A year ago, Bella was twice the age I was two years ago
- The sum of mine and Amelia's ages is 21

Can you work out how old Amelia, Bella and Connor are?

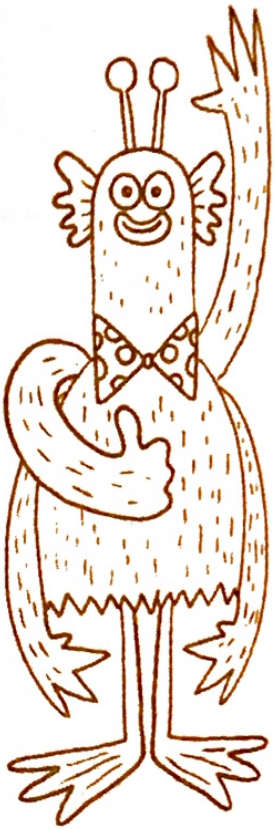
Amelia



Bella



Connor



Amelia is .....

Bella is .....

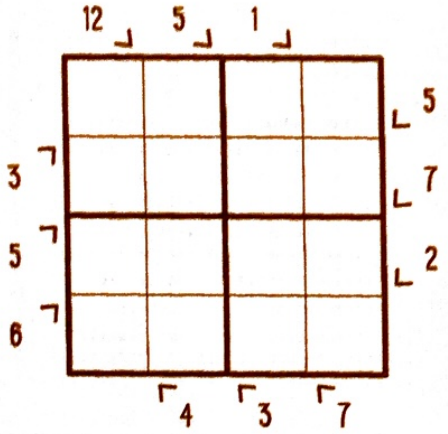
Connor is .....

TIME .....

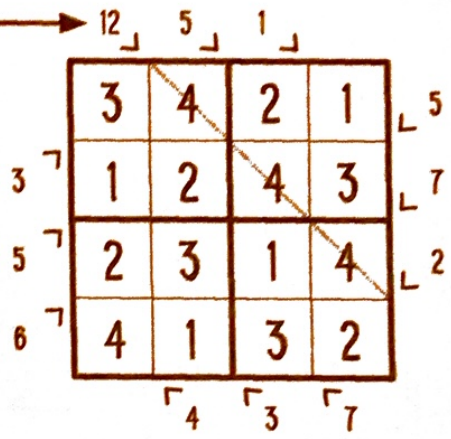
MATHS PUZZLE 27

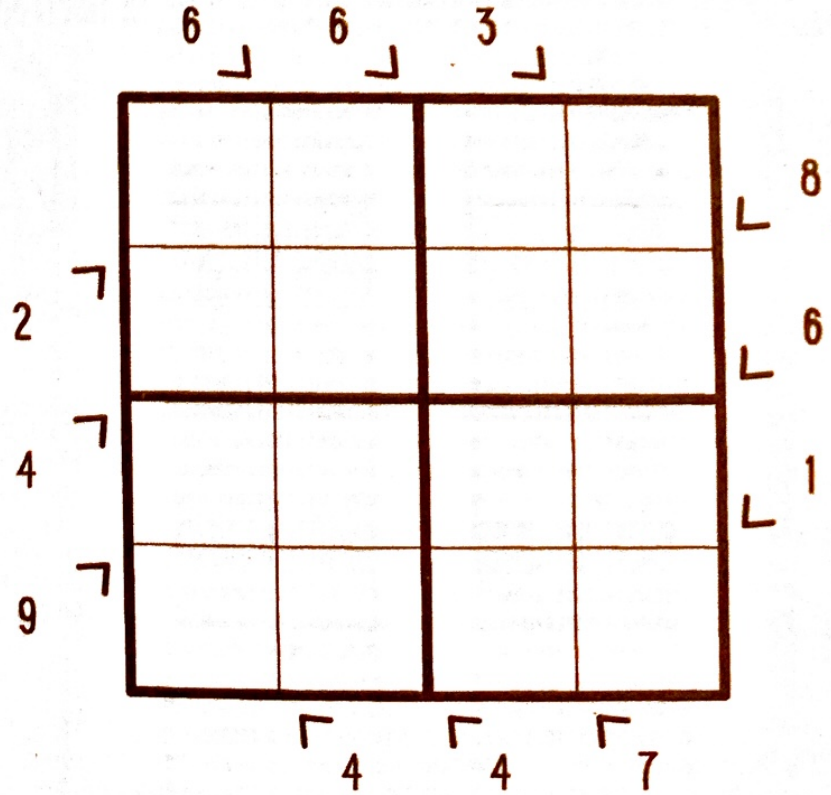
To solve this diagonal sum sudoku puzzle, place 1 to 4 once each into every row, column and bold-lined 2x2 box, just like in regular sudoku. Each of the numbers outside the grid tell you the sum of the diagonal pointed to by its arrow.

Here's an example to show you how the puzzle works:



In this diagonal line, for instance, 4 + 4 + 4 = 12



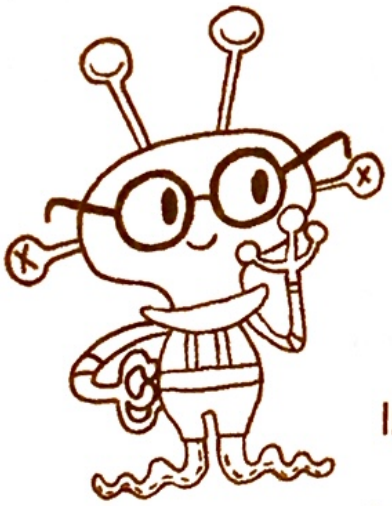


MATHS PUZZLE 28

TIME .....

This is a kakuro puzzle. Can you place a number from 1 to 9 in each white square, so that each 'run' of continuous horizontal or vertical white squares adds up to the number given to the left or the top of that 'run'? You can't repeat a number within any 'run', so for example you could form a total of 4 with 1+3, but not with 2+2.

Here's a finished example:



			9	13		
		16 / 12	7	9		
	6 / 4	1	2	3	21	5
6	1	5	7 / 13	1	4	2
11	3	6	2	12 / 14	9	3
		17	4	5	8	
		16	7	9		

In these two 'runs', for instance, 9 + 5 = 14 vertically and 7 + 9 = 16 horizontally

	9	20			11	4
17				11 / 7		
4			6 / 11			
	13				13	
	15	7 / 16				17
23				9		
16				17		

TIME .....

MATHS PUZZLE 29

Welcome to Triangle Town, where almost everything has three sides. See how many of the following triangles you can spot and write your answers underneath. As a clue, your answers should be multiples of 3.

Scalene

.....

Equilateral

.....

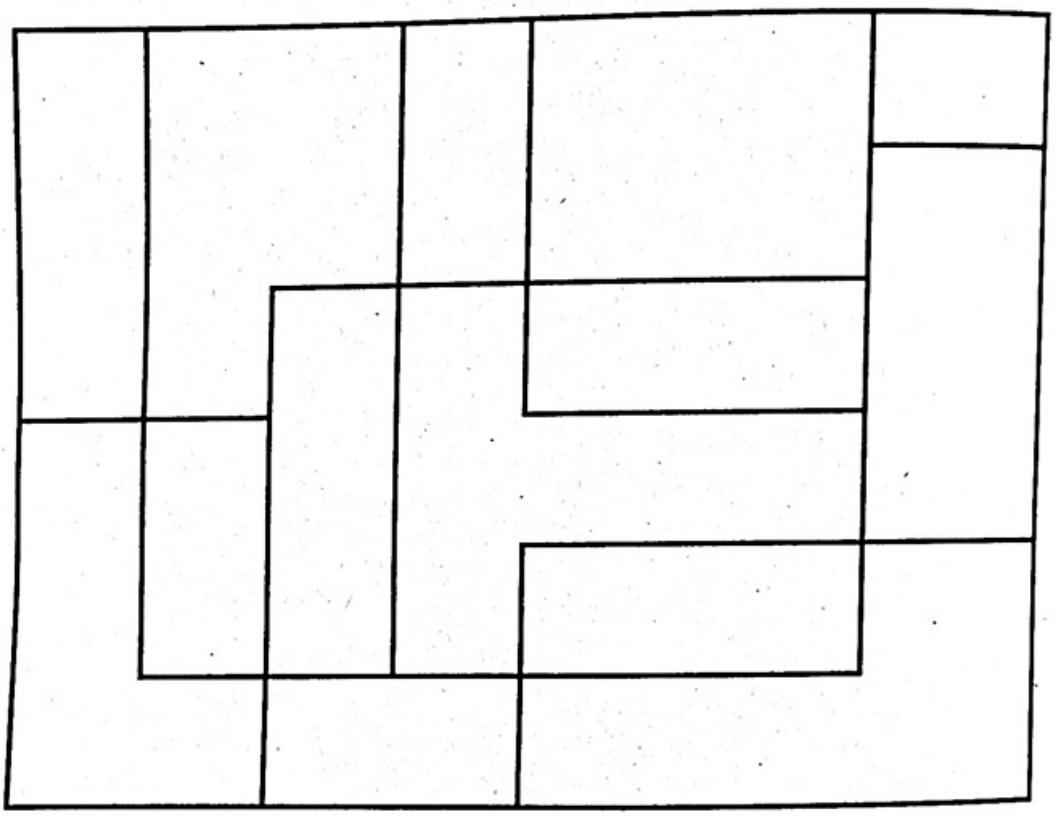
Right-angled

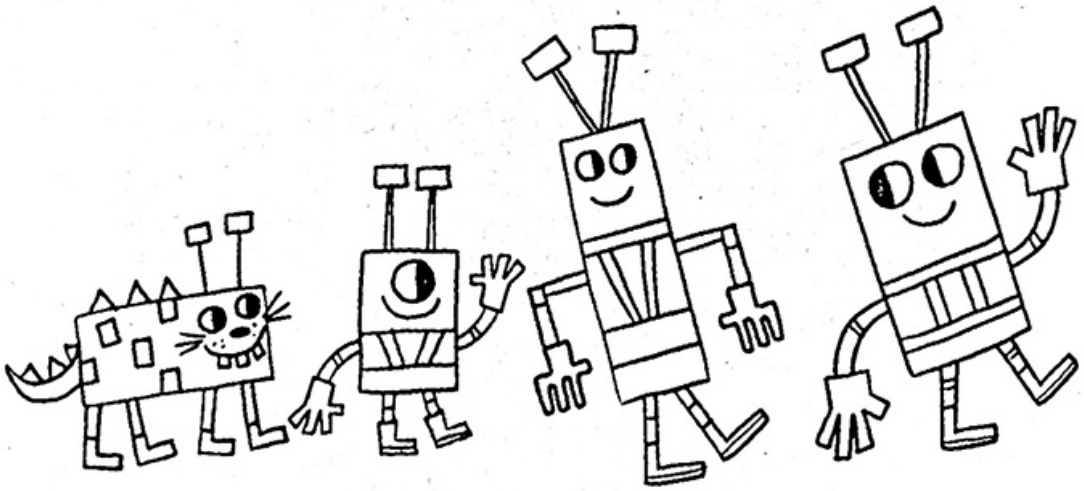
.....

MATHS PUZZLE 30

TIME .....

How many rectangles can you count in this image? Include every one you can find, including the large one all around the edge of the image. Don't forget that smaller rectangles can be blocked together to create bigger rectangles.



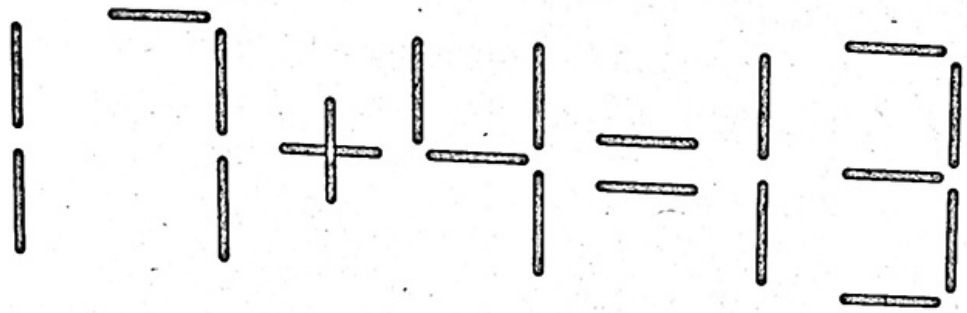


There are ..... rectangles.

TIME .....

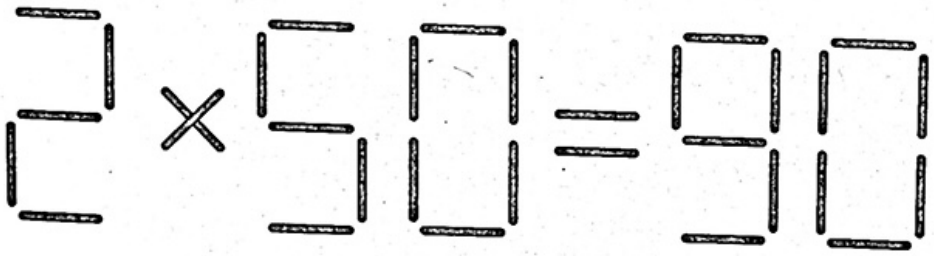
MATHS PUZZLE 31

The following equation is incorrect, but can you remove just one stick in order to correct it?



Answer: .....

This equation is incorrect too, but can you fix it this time by moving exactly two sticks?



Answer: .....

Then, once you've done that, can you find a different way of fixing it by again moving exactly two sticks?

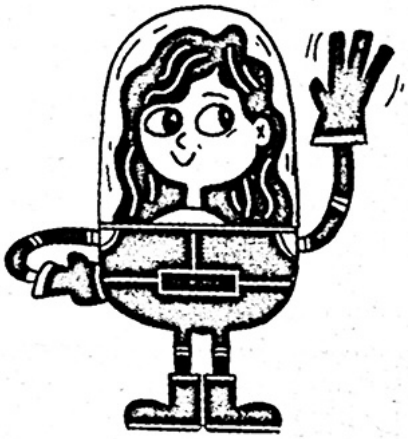
Answer: .....

MATHS PUZZLE 32

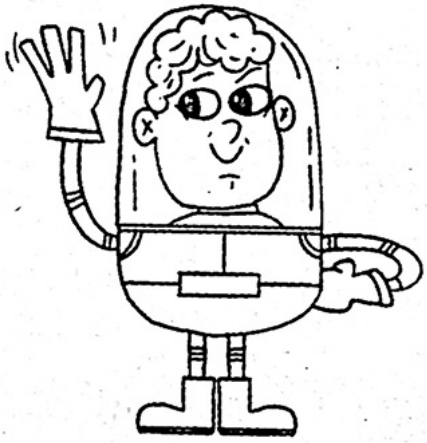
Commander Callisto and Commander Comet each captain a space station and a fleet of ships separated by an asteroid belt. They share the space between the asteroids but rarely venture into opposite territories. Can you figure out the fraction-based questions on the opposite page by looking at the drawing below?

TIME .....

Commander Callisto



Commander Comet



In each of the following questions, simplify your fractions if you can. For example, 6/8 could be simplified to 3/4.

a) What fraction of all of the rockets are black?

.....

b) What fraction of the white rockets are in the asteroid belt?

.....

c) What fraction of the black rockets have exactly two circular windows?

.....

d) What fraction of the rockets in the asteroid belt have curved fins?

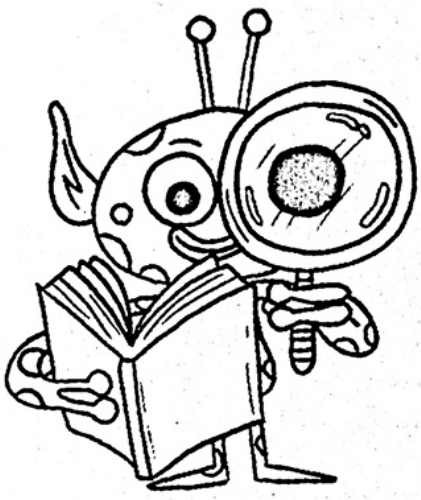
.....

MATHS PUZZLE 33

TIME .....

To solve this Calcudoku puzzle, place 1 to 4 once each into every row and column. You must place these numbers so that the values in each bold-lined region of grid squares add up to the small number printed in the top-left hand corner of the region.

Here's a finished example:



Numbers 1, 2, 3 and 4 appear once in each column and each row

6+ 3	2 2	5+ 1	4
2	7+ 3	4	6+ 1
1	6+ 4	2	3
5+ 4	1	3+ 3	2

The numbers in each bold segment add up to equal the small number in the corner: 4 + 1 = 5, for instance

1	3+	10+	
7+			3+
	9+	3+	
			4

TIME .....

MATHS PUZZLE 34

Which number is the odd one out in each of these two mathematical sets? All of the other numbers share the same property (such as, for example, all being multiples of 3), except for one.

a)

9	21	33
47	64	83

Answer: ..... is the odd number out

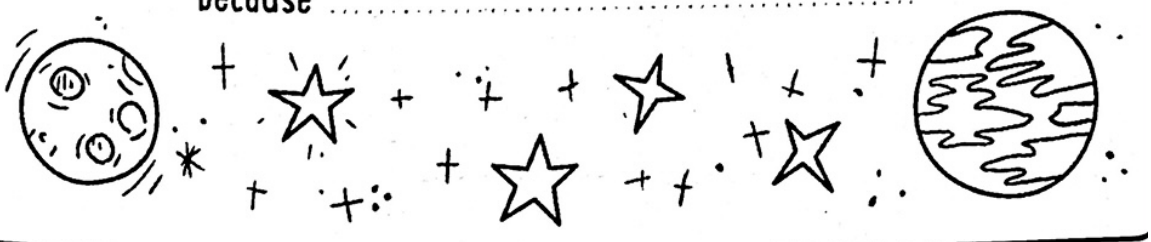
because .....

b)

23	31	7
47	19	21

Answer: ..... is the odd number out

because .....



MATHS PUZZLE 35 → TIME .....

Can you add or subtract each of these pairs of times, and write the resulting time in the corresponding empty box? The times use the 24-hour clock, and you should add or subtract the number of hours and minutes shown to get the final resulting time.

23:25 - 04:10 = ☐

13:05 - 04:35 = ☐

06:10 + 00:40 = ☐

16:55 - 06:50 = ☐

05:45 - 03:05 = ☐

23:00 - 04:45 = ☐

13:25 - 05:45 = ☐

03:45 + 07:15 = ☐

15:35 - 03:25 = ☐

11:00 + 10:25 = ☐

TIME .....

MATHS PUZZLE 36

Can you solve the following sums, each of which uses Roman numerals? Your answers should be in Roman numerals too!

a) XXX - XII = ...

b) XIX - V = ...

c) LX + XL = ...

d) VII + VI + V + IV + III = ...

e) IX × XI = ...

f) I + V + X + L + C = ...

CODE

I = 1

V = 5

X = 10

L = 50

C = 100

MATHS PUZZLE 37

To solve the sudoku XV puzzle on the opposite page, place 1 to 6 once each into every row, column and bold-lined 3x2 box, just like in regular sudoku.

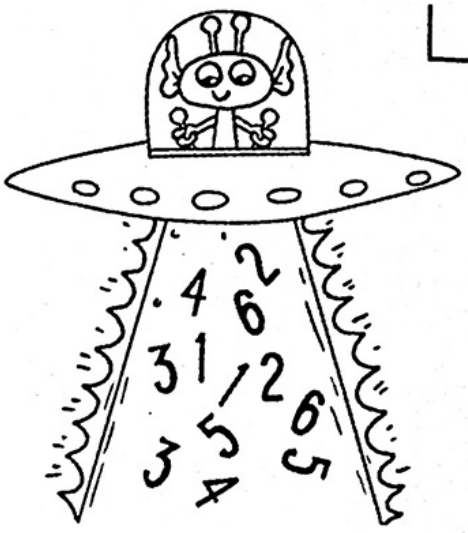
Also, wherever an 'X' or a 'V' join two squares then the sum of those two squares is either 10 (for 'X'), or 5 (for 'V'), respectively – just like Roman numerals. If there isn't an 'X' or 'V' between two squares then those two squares definitely don't add up to either 10 or 5.

Here's an example:

		5	2		
2					4
6					2
		1	6		

The numbers here are joined by an 'X', so they must add up to 10

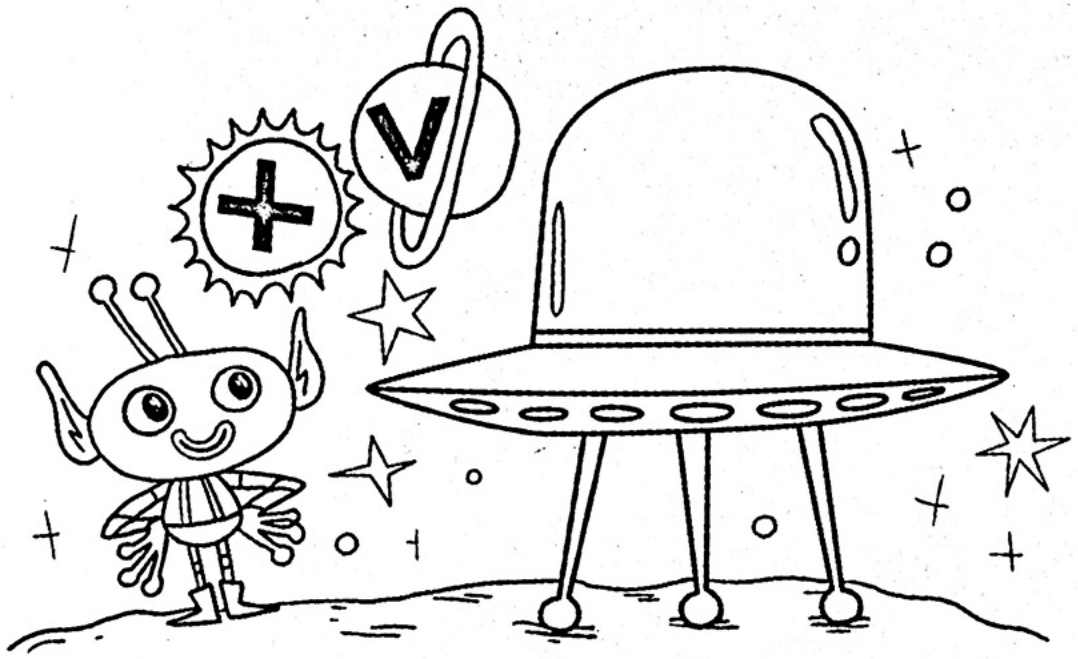
The numbers here are joined by a 'V', so they must add up to 5



1	3	5	2	4	6
4	2	6	3	1	5
2	5	3	1	6	4
6	1	4	5	3	2
3	6	2	4	5	1
5	4	1	6	2	3

TIME .....

	3			6	
	5			2	



MATHS PUZZLE 38 →

TIME .....

You are given a calculator that has just been turned on. Can you make it display a particular number? The only problem is that most of the keys are broken, and only the −, ×, ÷, = and 4 work.

a) First, can you find a way to make 13 appear on the display using just 9 keypresses? You can experiment with a real calculator if you like!

Answer: .....

b) Once you have managed that, you turn the calculator off and back on again, to reset it to 0. Now can you make it display 28? Can you do it in just 10 keypresses?

Answer: .....

c) Finally, you reset the calculator to 0 again. Now can you make it display 11 in just 5 keypresses?

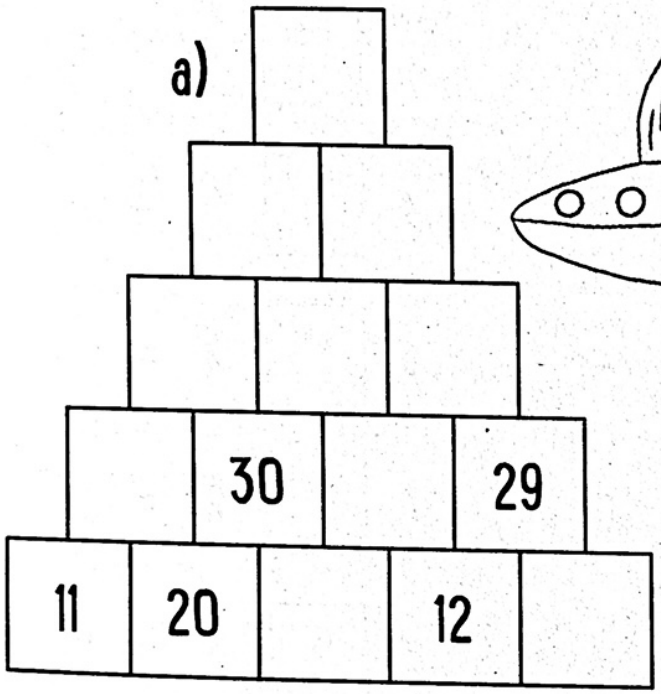
Answer: .....

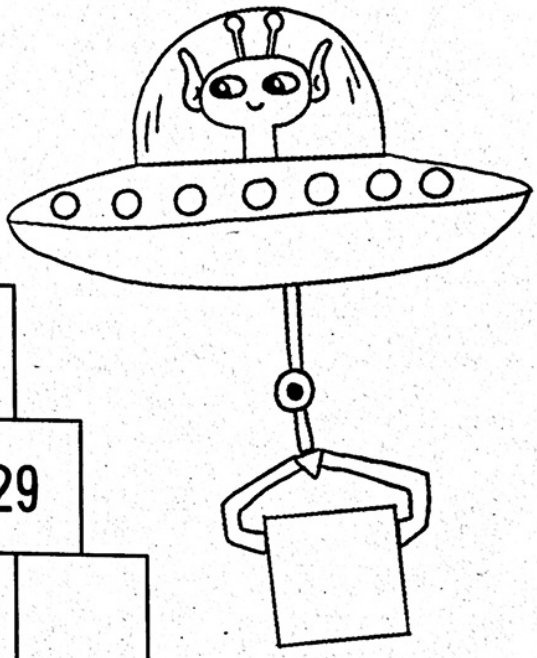
TIME .....

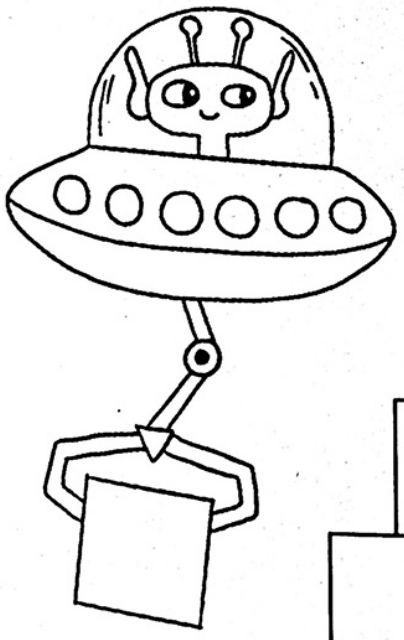
MATHS PUZZLE 39

Write a number in each empty pyramid block, so that every block is equal to the sum of the numbers of the two blocks directly beneath it.

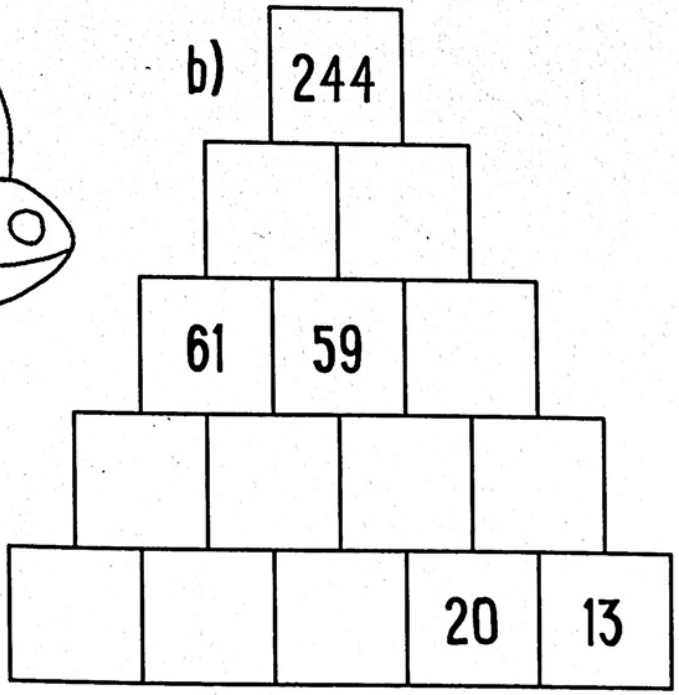
a)







b)



MATHS PUZZLE 40

TIME .....

Place a mathematical operation sign (−, ×, ÷ and +) in each empty box on the page so that every equation is correct.

72 ☐ 6 = 12

64 ☐ 8 = 56

39 ☐ 8 = 47

44 ☐ 16 = 60

12 ☐ 2 = 6

20 ☐ 5 = 4

58 ☐ 3 = 55

10 ☐ 49 = 59

4 ☐ 6 = 24

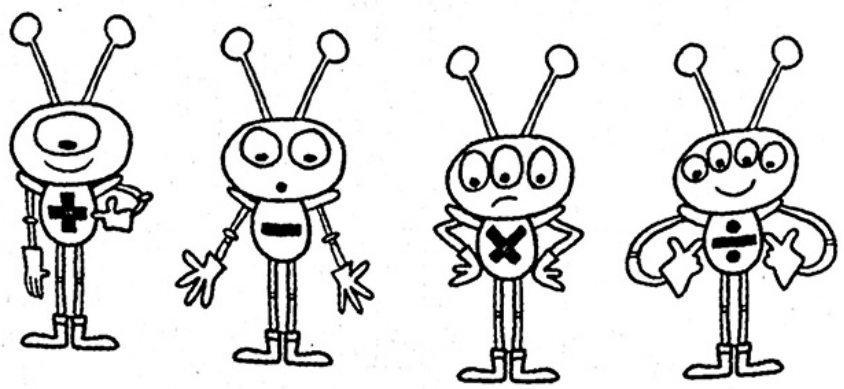
56 ☐ 2 = 54

27 ☐ 2 = 25

5 ☐ 3 = 15

24 ☐ 6 = 4

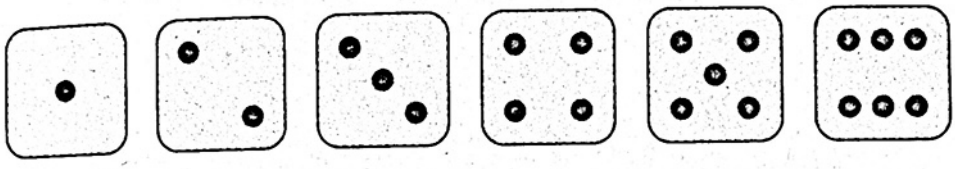
15 ☐ 68 = 83



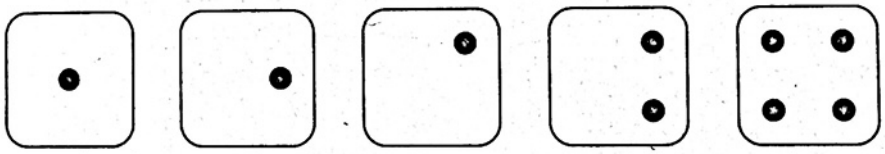
TIME .....

MATHS PUZZLE 41

The six sides of a regular dice look like this:



Here are five dice, all viewed from above. Unfortunately, some of the dots have rubbed off and so you can't be sure of the exact value showing on each dice:



a b c d e

a) Which of the dice could be fives?

Answer: .....

b) Which of the dice could be twos? Remember that the dice faces might be rotated compared to the example faces at the top of the page.

Answer: .....

c) What is the highest possible total value of these five dice?

Answer: .....

d) What is the lowest possible total value of these five dice?

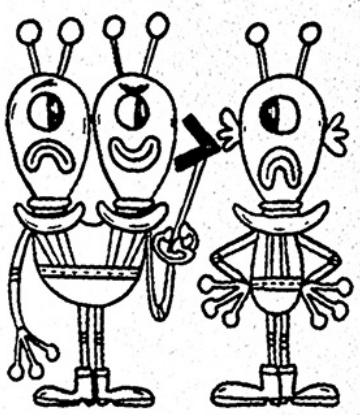
Answer: .....

MATHS PUZZLE 42

TIME .....

Solve this Futoshiki puzzle by placing the numbers 1 to 4 once each into every row and column. You must obey the 'greater than' signs. These are arrows which always point from the bigger number to the smaller number of a pair. For example, you could have '2 > 1', or '3 > 1', or '4 > 1', since 2, 3 and 4 are greater than 1, but '1 > 2' would be wrong because 1 is not greater in value than 2.

Here's a finished example:



4	> 3	> 1	< 2
2	1	3	< 4
1	4	2	3
3	2	4	1

	<		< 4
	>		
3		>	>

TIME .....

MATHS PUZZLE 43

The numbers below add up to 40. By removing some numbers, you can reduce the total. For example, if you remove the 3, 6 and 11 the total is now 20.

3 5 6 7 8 11

By removing one or more of the numbers, can you make each of the totals below? Each total can be made in three different ways – can you find all three methods in each case?

29 (in 3 different ways)

1) .....

2) .....

3) .....

24 (in 3 different ways)

1) .....

2) .....

3) .....

16 (in 3 different ways)

1) .....

2) .....

3) .....

MATHS PUZZLE 44

TIME .....

Can you form each of the given totals, by choosing one number from each ring of this dartboard?

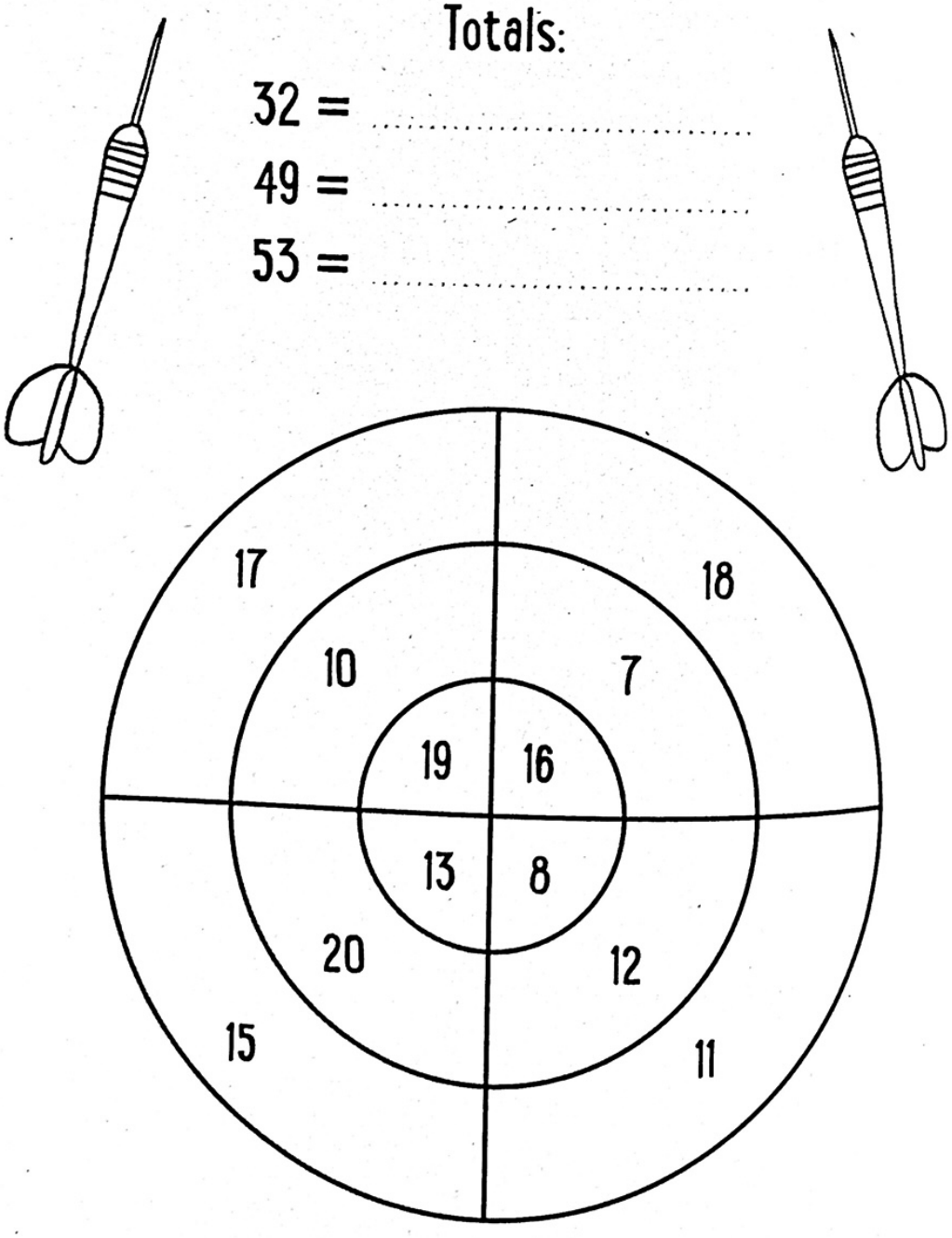
For example, you could form a total of 29 by picking 8 from the innermost ring, 10 from the middle ring and 11 from the outermost ring. You can't pick from the same ring more than once per go.

Totals:

32 = ...

49 = ...

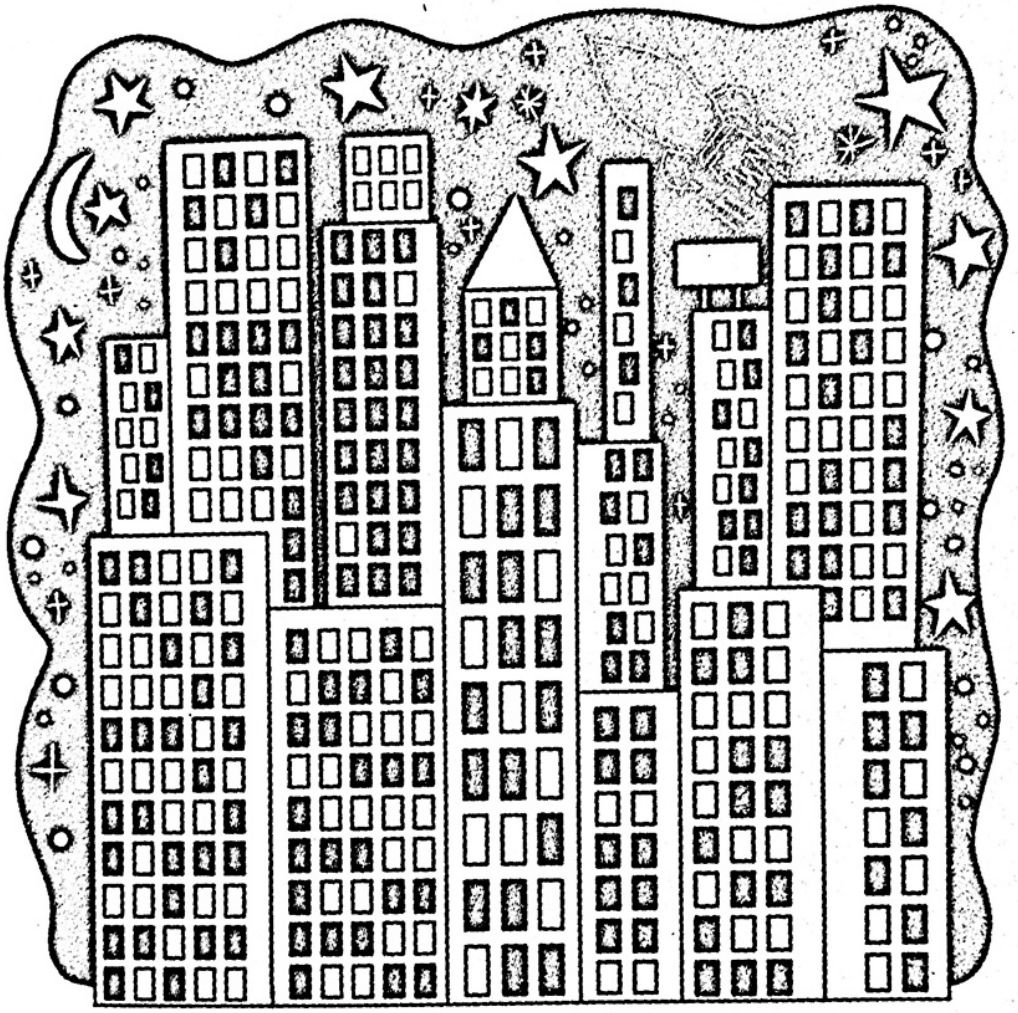
53 = ...



TIME .....

MATHS PUZZLE 45

Some of the inhabitants in these skyscrapers are asleep, and some are awake. Can you answer the questions below, based on who has their lights on and who has them switched off?



a) What is the greatest number of windows you can see on a single building?

Answer: .....

b) What is the greatest number of lit rooms you can see in a single row or column of a building?

Answer: .....

MATHS PUZZLE 46

TIME .....

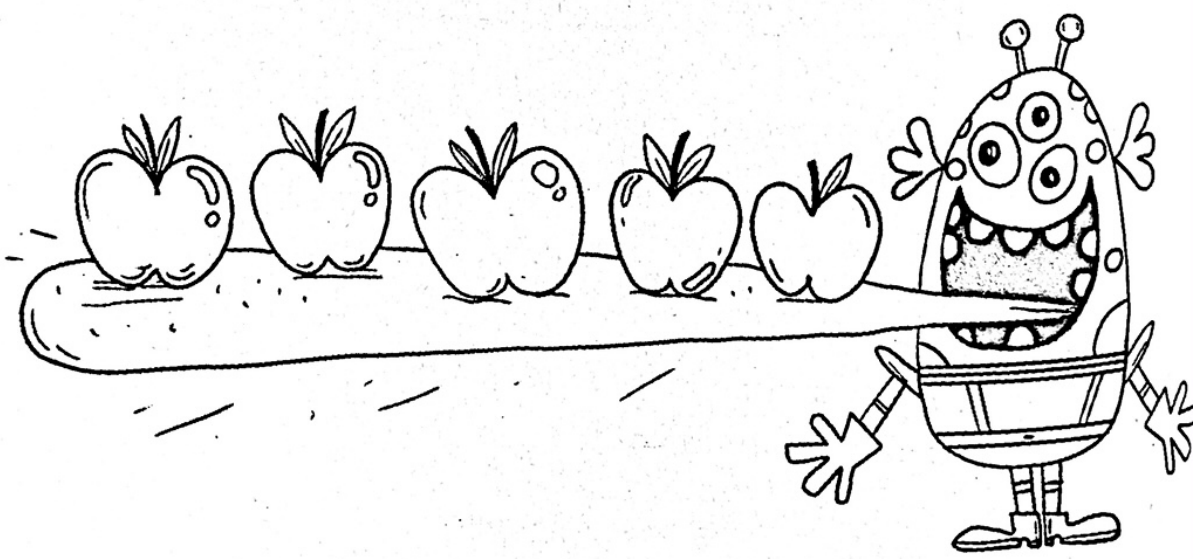
Can you solve these puzzles by working out how many apples have been eaten?

a) Today is Friday, and each day this week I have eaten twice as many apples as I did the previous day. On Wednesday I ate eight apples. How many apples did I eat in total from Monday to Friday this week?

Answer: .....

b) I eat two apples every day, except on weekends when I only have one apple a day. In a 28-day month (starting on a Monday), how many apples do I eat?

Answer: .....

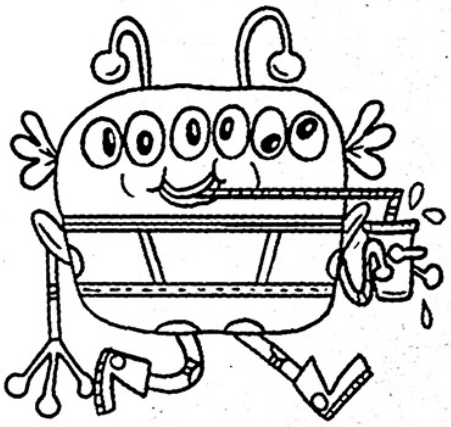


TIME .....

MATHS PUZZLE 47

To solve this frame sudoku puzzle, place 1 to 6 once each into every row, column and bold-lined 3x2 box, just like in regular sudoku. The numbers outside the grid tell you the sum of the nearest numbers in the corresponding row or column, reading up to the first bold line.

Here's a finished example:



	8	7	6	7	6	8	
7	2	4	1	3	5	6	14
14	6	3	5	4	1	2	7
10	1	6	3	5	2	4	11
11	5	2	4	6	3	1	10
11	4	5	2	1	6	3	10
10	3	1	6	2	4	5	11
	7	6	8	3	10	8	

For instance, 3 + 5 = 8 vertically, and 2 + 4 + 5 = 11 horizontally

	9	3	9	9	9	3	
9	5					2	12
12							9
8							13
13							8
9							12
12	2					3	9
	3	9	9	3	9	9	

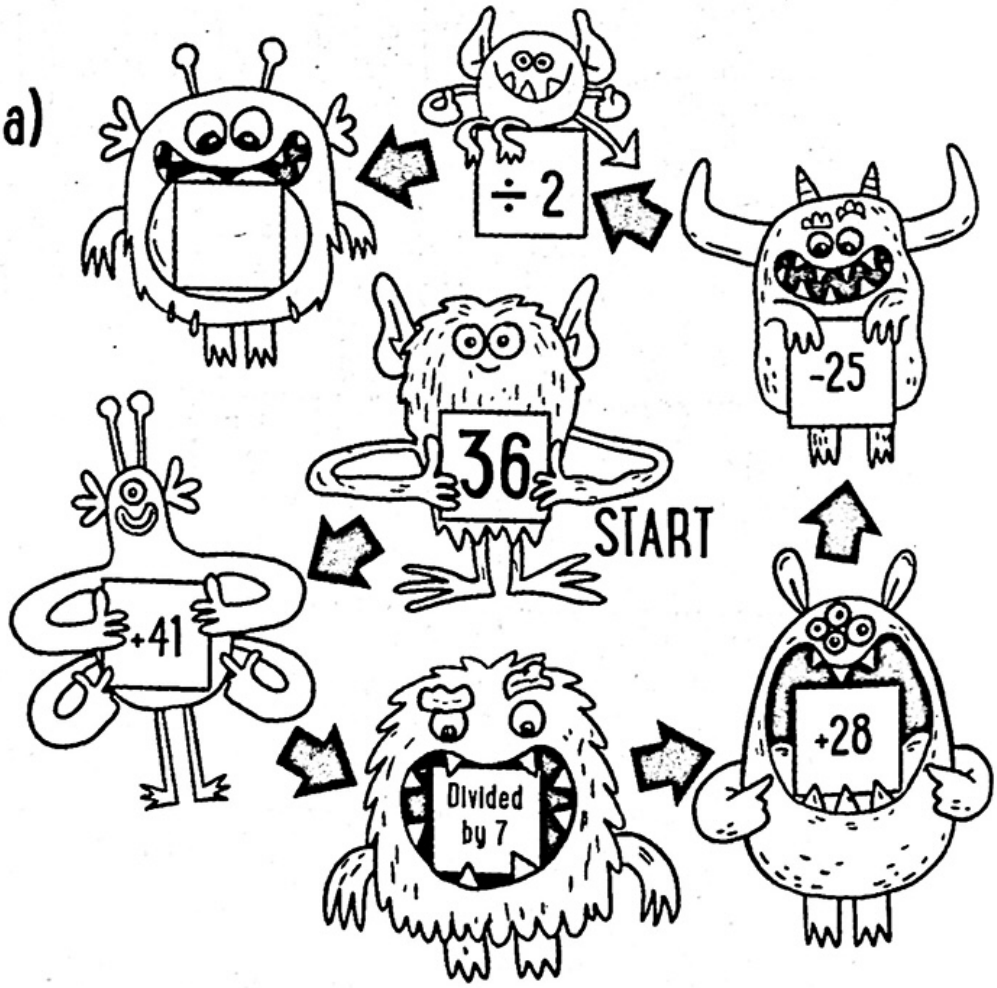
MATHS PUZZLE 48

These space monsters are marvellous at maths. They have created some mental-arithmetic puzzles for you to solve.

Each of these monster chains is giving you some mathematical instructions. Begin with the number at the START of each sequence, and then apply each mathematical operation in turn until you reach the end of the row. Try to do all of the maths in your head, without making any written notes.

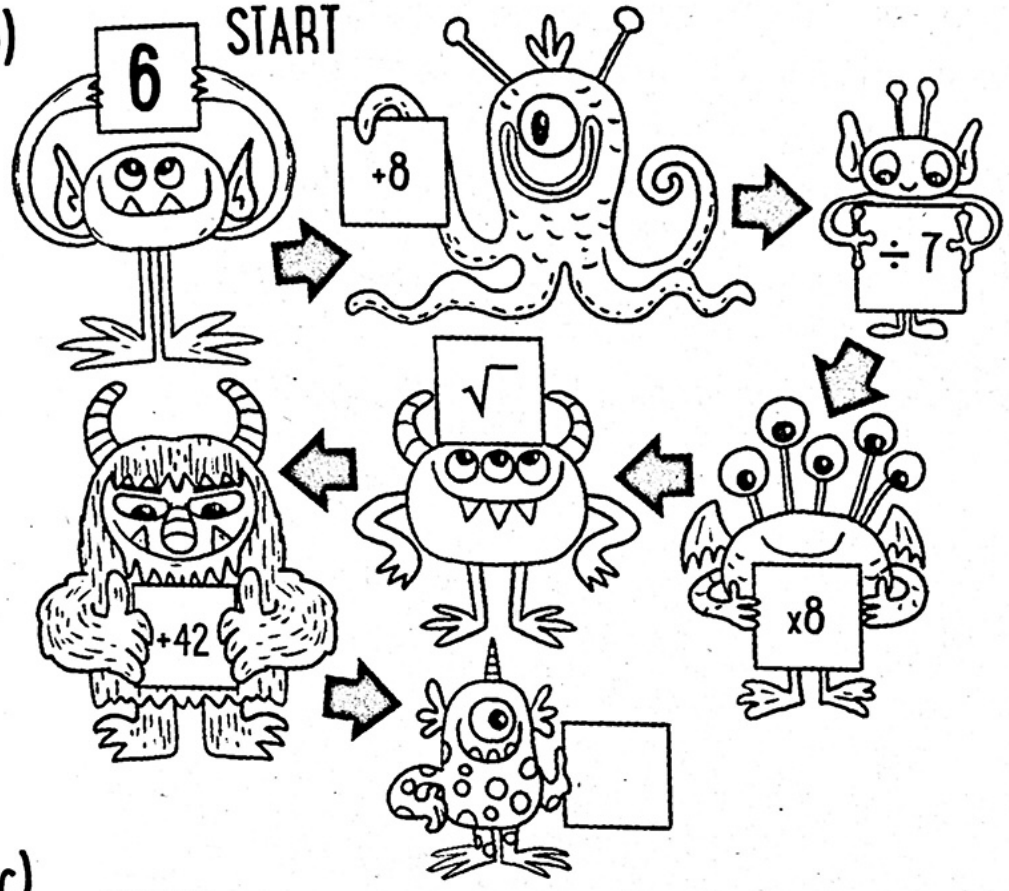
Write your answer in the box at the end of each sequence.

a)

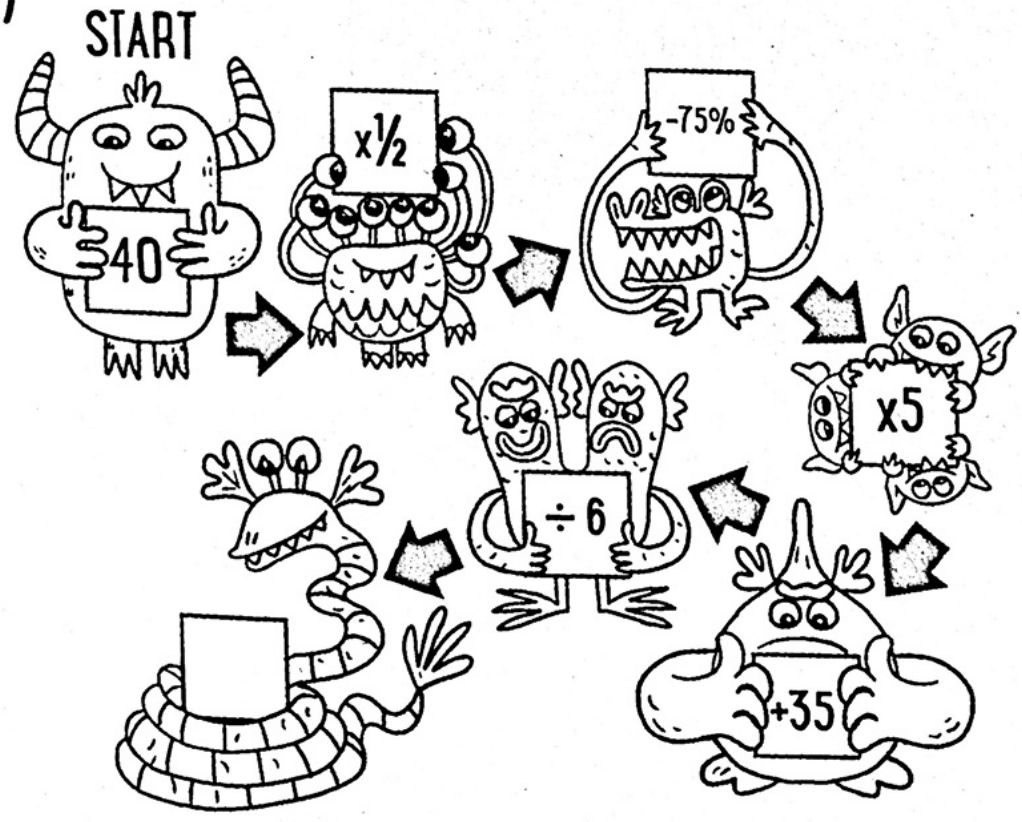


TIME .....

b)



c)

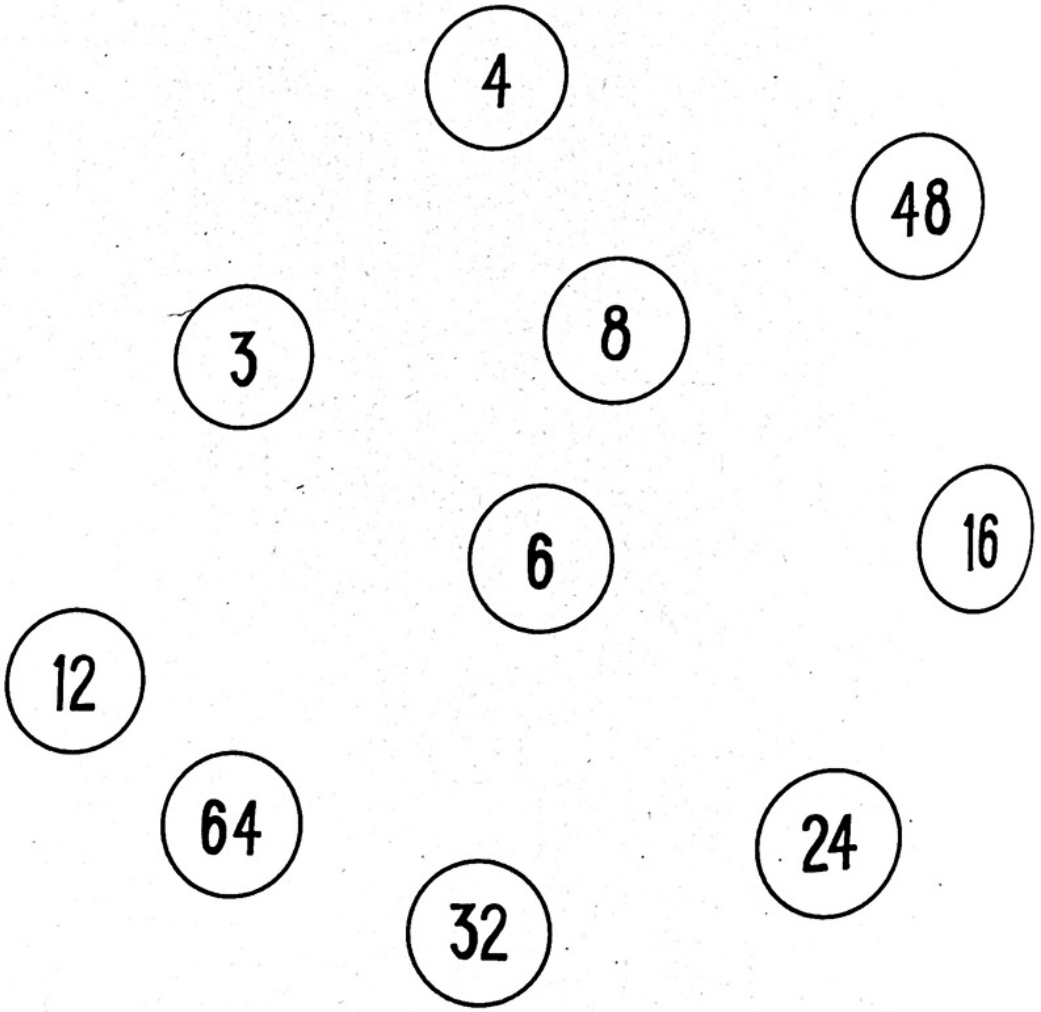


MATHS PUZZLE 49

TIME .....

These 10 numbers can be divided into two mathematical sequences, each of 5 numbers. Draw lines to form a path that joins each sequence of 5 numbers in order. In other words, draw a line from the first number of a sequence to the second number of that sequence, and then from that second number to the third number of the sequence, and so on, up to the fifth number.

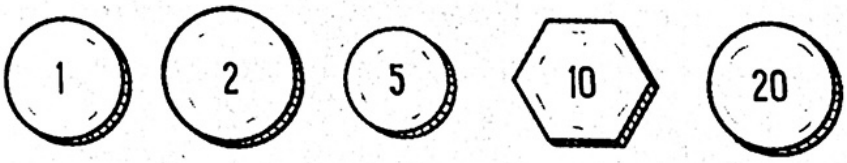
For example, if one sequence was '+3', you could start by drawing a line to join the 3 to the 6.



TIME .....

MATHS PUZZLE 50

In the distant land of Yonderous they have five different values of coin, as shown below, and their currency is the catchily named Yonderian pence.



Assuming that you have as many of each value of coin as you might need, can you answer the following questions?

a) What is the minimum number of coins you can use to spend a total of 63 Yonderian pence?

.....

.....

b) If you use no more than three of any value of coin, what is the maximum number of coins you can use to spend 87 Yonderian pence?

.....

.....

c) If I buy something that costs 123 Yonderian pence, what is the minimum number of coins I could receive as change for 150 Yonderian pence?

.....

.....

MATHS PUZZLE 51

The 'killer sudoku' puzzle on the opposite page is a variation on regular sudoku. Not only must you place 1 to 6 once each into every row, column and bold-lined 3x2 box, but you must also place the numbers so that each dashed-lined region of grid squares adds up to the small number printed in the top left-hand corner of that region.

There's also one important extra rule: you can't repeat a number inside a dashed-lined cage, so for example the solution to the '10' region in the puzzle below couldn't be 4+4+2.

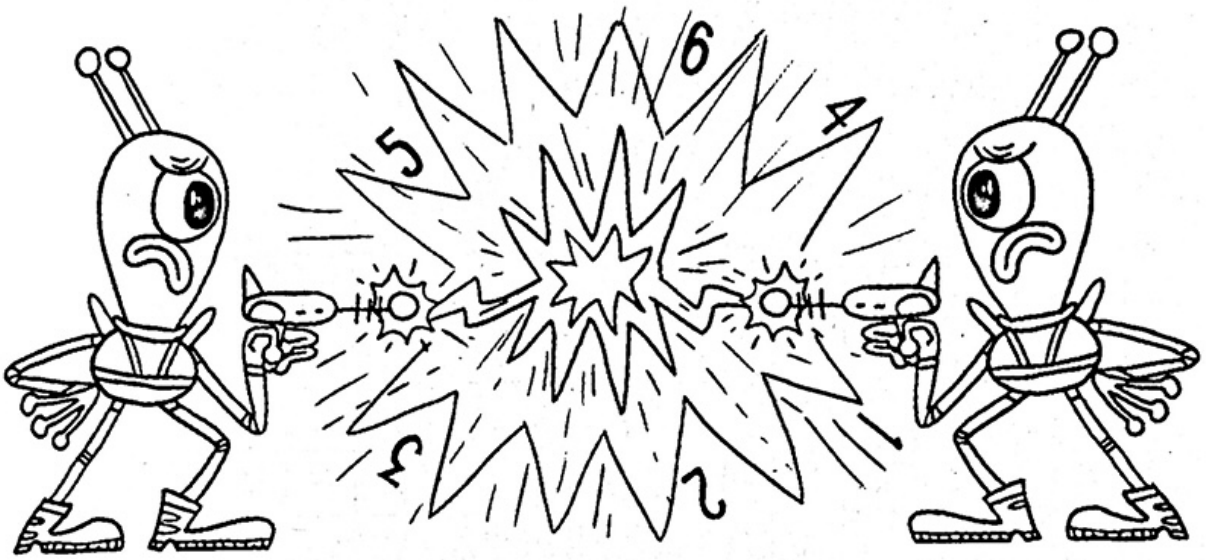
Here's a finished example:

For instance, 6 + 4 + 2 = 12
In this dashed-lined cage

8 5	5 1	12 6	4	2	8 3
2	4	10 3	7 1	6	5
1	9 3	5	2	9 4	6 6
4 4	6	11 2	3	5	7 1
9 3	9 5	4	6	4 1	2
6	8 2	1	5	3	4

Numbers 1-6 must fit once each into every bold-lined box, row and column

TIME .....



7	8		17	4	
	1	8			
8			5		5
1	9		4	8	
11				6	7
10			7		

MATHS PUZZLE 52

Take a look at the calendars below and see if you can answer the questions on the opposite page.

SEPTEMBER

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

OCTOBER

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

NOVEMBER

					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JANUARY

			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY

						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

TIME .....

a) If it's the 1st of September today, how many days is it until the 23rd of October?

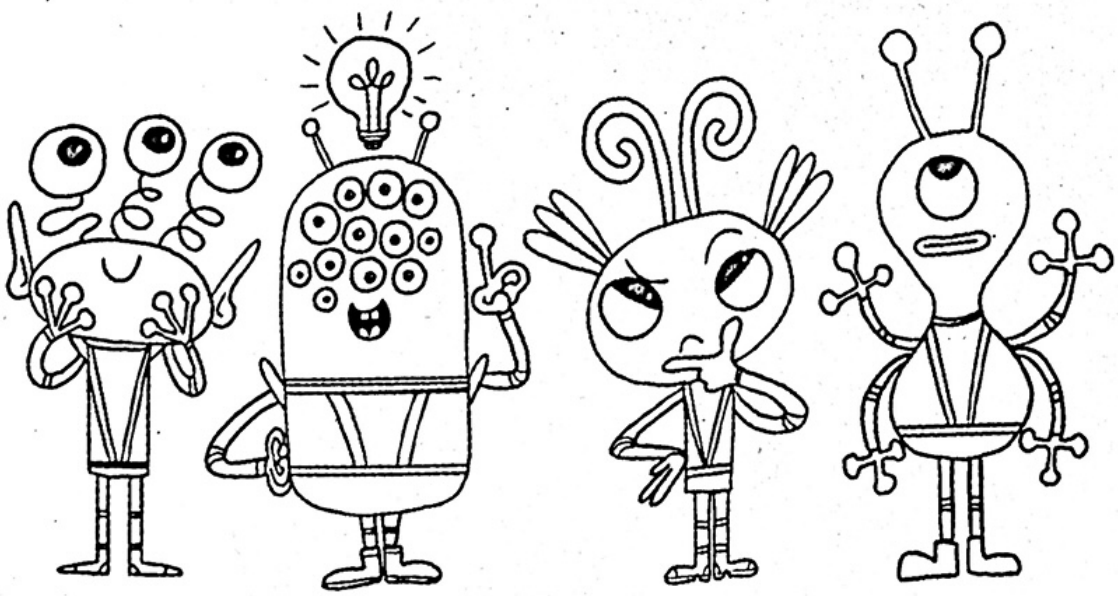
Answer: .....

b) If yesterday was the 4th of February, how many days ago was the 11th November?

Answer: .....

c) If two weeks today will be Christmas Day, how many days is it until New Year's Day?

Answer: .....

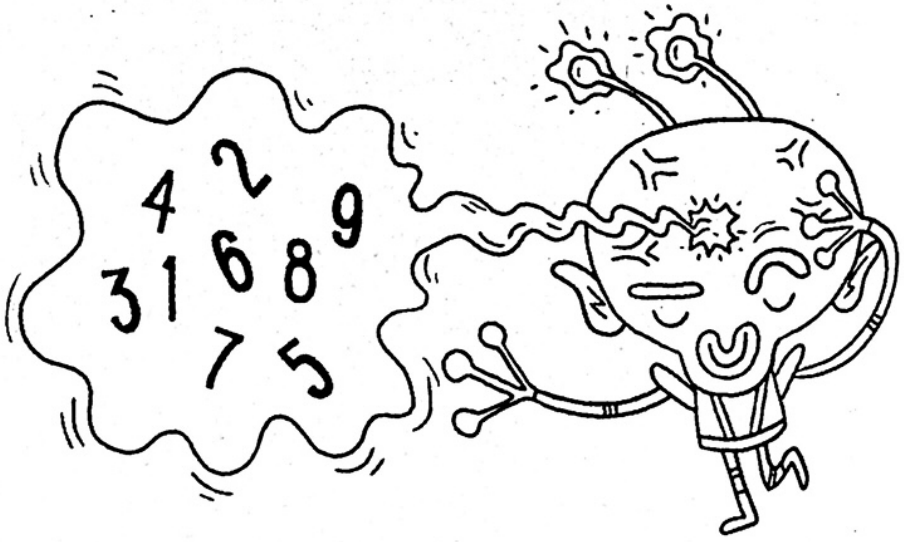


MATHS PUZZLE 53

TIME .....

Can you place the digits 1 to 9 once each into the nine empty squares so that each of the mathematical equations is correct? Three equations read left-to-right, and three read top-to-bottom.

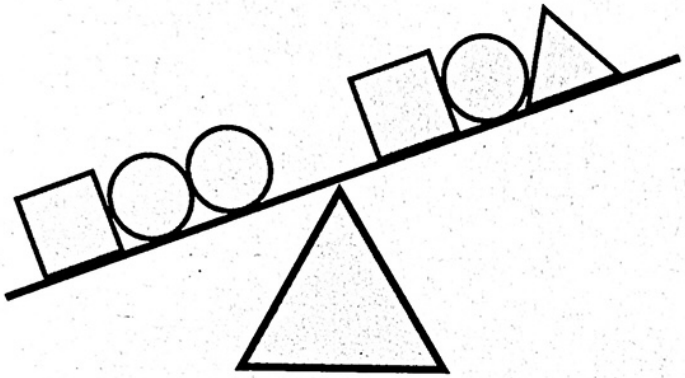
	+		+		=	24
+		÷		×		
	×		÷		=	8
+		÷		−		
	×		−		=	9
=		=		=		
20		1		20		

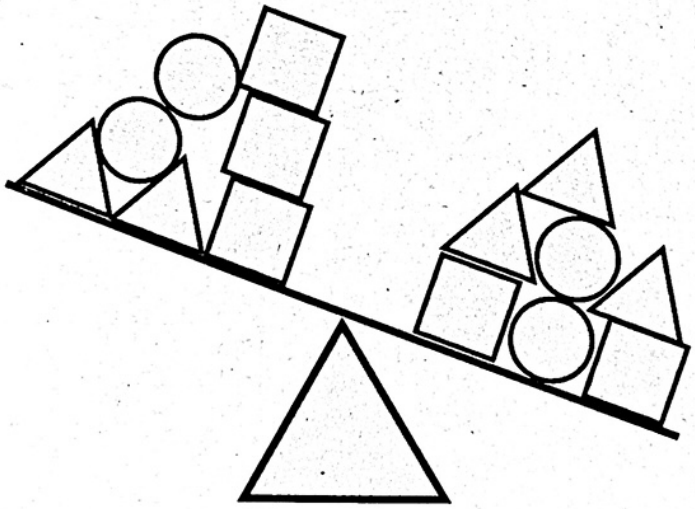


MATHS PUZZLE 54

Which of the three shapes, circle, square and triangle, weighs the most? And which of the three shapes weighs the least?

In each of the pictures, assume that the distance from the pivot in the middle is irrelevant.



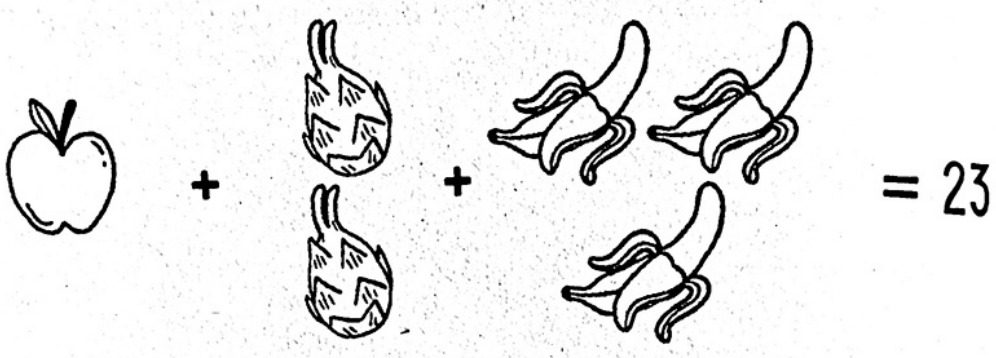


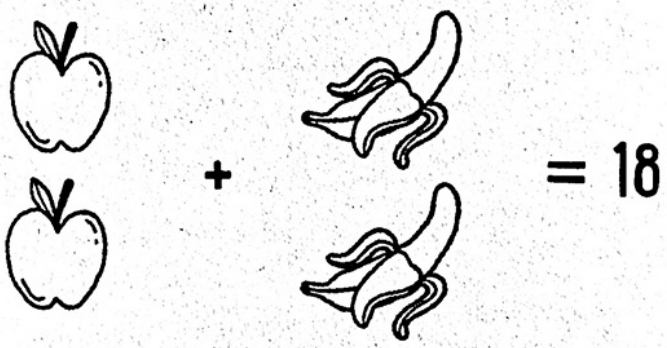
..... weighs the MOST.

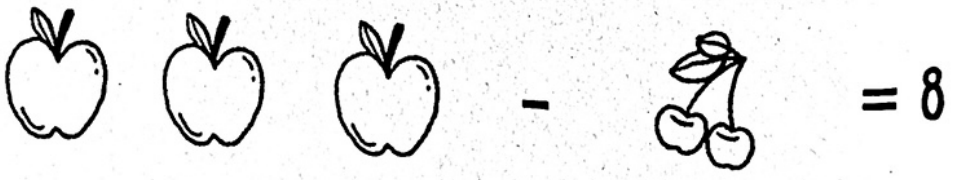
..... weighs the LEAST.

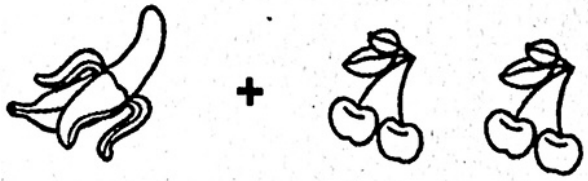
MATHS PUZZLE 55

Looking at these picture equations, can you work out the value of each of the items?









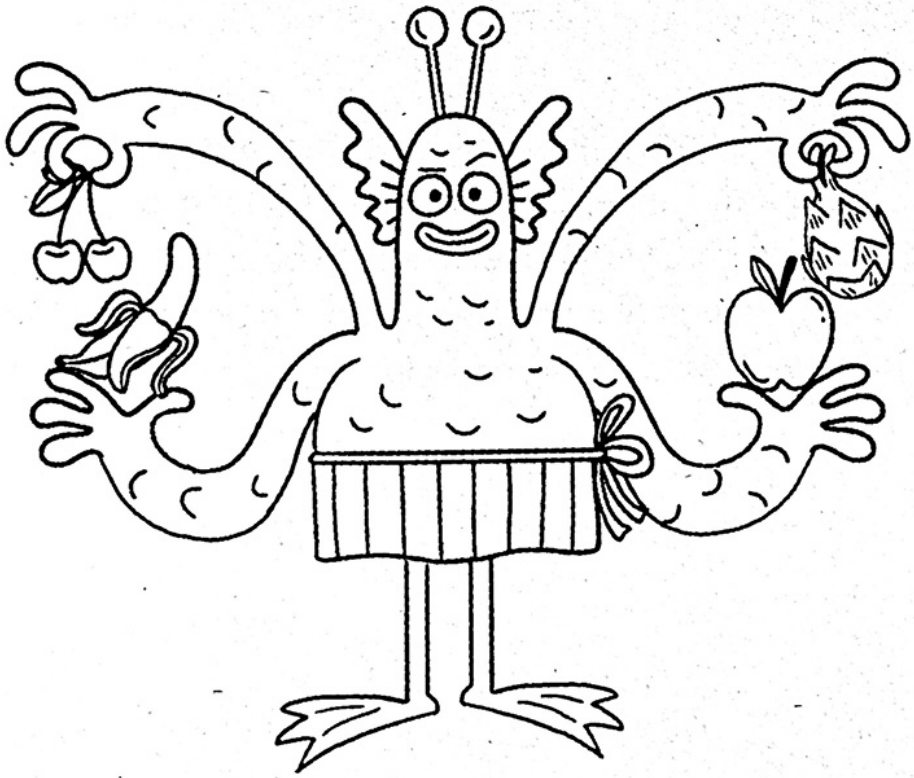
TIME .....

Apple = ...

Banana = ...

Cherry = ...

Dragon fruit = ...



MATHS PUZZLE 56

TIME .....

Can you solve these space-based puzzles to prove that you're a maths supernova?

a) The cooking instructions on the back of my space food state that I must cook for 30 minutes, plus an additional 15 minutes per 250g. If the item I have weighs 750g, how long should I cook it for?

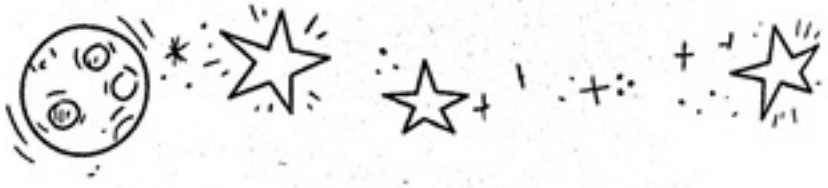
Answer: .....

If I then buy another of the same item at the space station shop and I need to cook it for 2 hours, how much does it weigh?

Answer: .....

b) I need to fix my spaceship by placing steel panels along one edge of the vessel. The repair should be 14m long, and each panel is 1m in width. Every panel needs to be attached to a post at each end, although two panels can share a post where they meet. How many posts do I need to fix my ship?

Answer: .....



TIME .....

MATHS PUZZLE 57

A regular pack of 52 playing cards contains 4 different suits (hearts, clubs, spades, diamonds), each of which contains 13 cards (Ace, 2, 3, 4, 5, 6, 7, 8, 9, 10, Jack, Queen, King).

a) If I shuffle the pack and deal a single card, what is the probability that I deal an Ace? Write your answer as a fraction.

Answer: .....

b) If I shuffle and deal a single card, what is the probability that I deal a heart? Write your answer as a fraction.

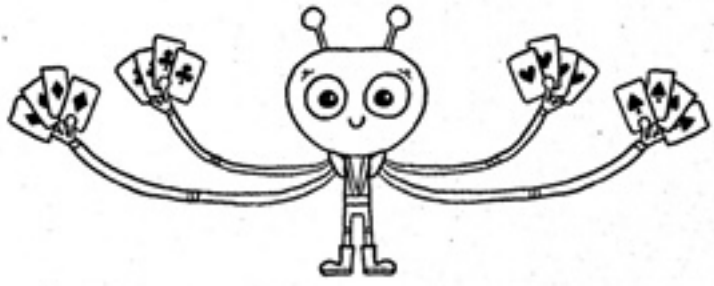
Answer: .....

c) If I shuffle the pack and deal a single card, what is the probability that I deal a Jack, Queen or King? Write your answer as a fraction.

Answer: .....

d) If I shuffle the pack and then deal two cards, what is the probability that both of them are clubs? Write your answer as a fraction.

Answer: .....



MATHS PUZZLE 58

TIME _____

Solve these Futoshiki puzzles by placing the numbers 1 to 5 once each into every row and column. You must obey the 'greater than' signs. These are arrows which always point from the bigger number to the smaller number of a pair. For example, you could have '2, 3, 4 or 5 > 1' since 2, 3, 4 and 5 are greater than 1, but '1 > 2' would be wrong because 1 is not greater in value than 2.

Here's a finished example:

2	5	1	3 <	4
1 <	3	4	2	5
3	4	5	1 <	2
5	2	3 <	4	1
4	1	2	5	3

2 <		<		
	5 >		<	
	>	2 <		
			1 <	
				2

TIME .....

MATHS PUZZLE 59

All of the questions on this page are about normal, six-sided dice.

a) What is the total value of the six sides of a dice?

Answer: .....

b) What is the maximum total value you can roll if you roll five dice?

Answer: .....

c) How many ways are there of forming a total of seven from two dice?

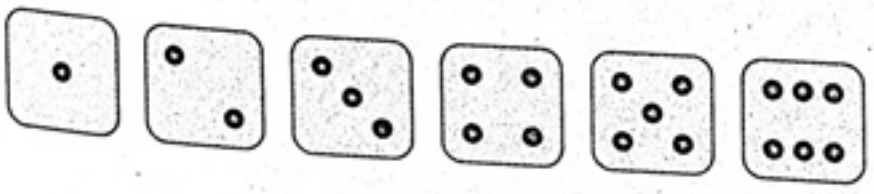
Answer: .....

d) What is the probability of rolling a total of seven when you roll two dice?

Answer: .....

e) And what is the probability of rolling a total of ten when you roll two dice?

Answer: .....



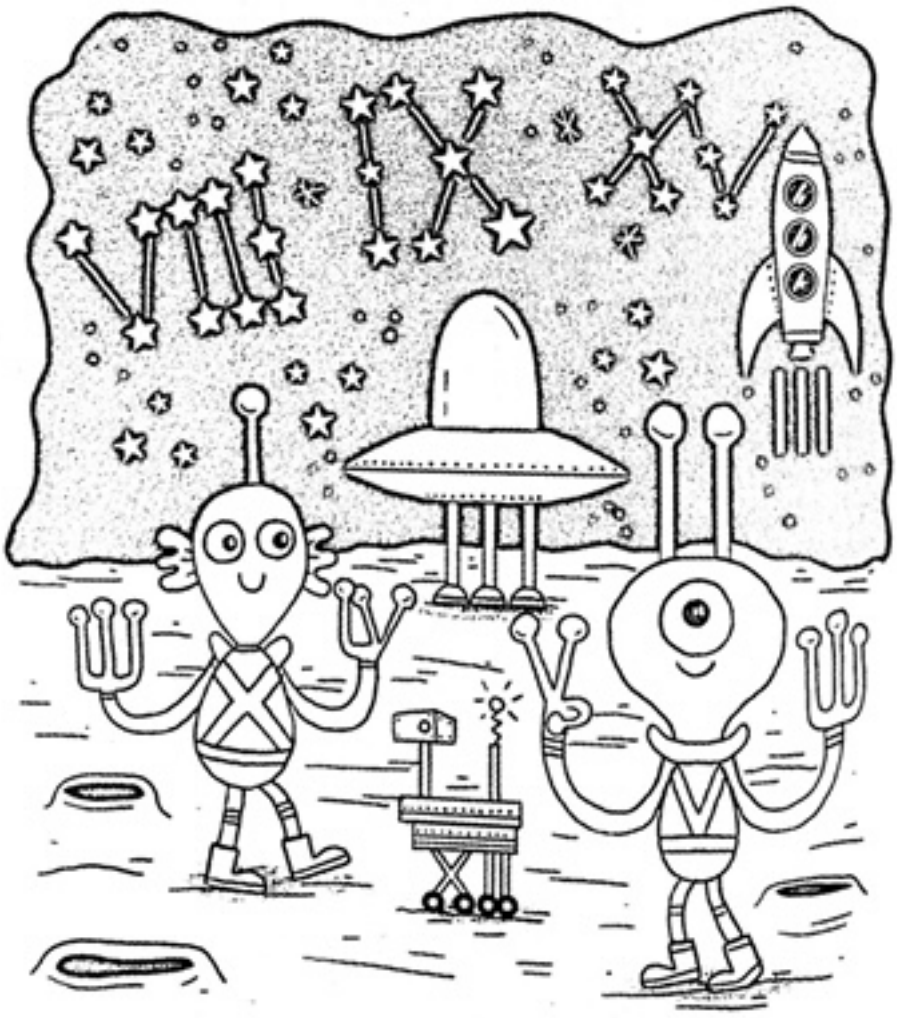
MATHS PUZZLE 60

TIME _____

This planet is hiding all sorts of Roman numerals. Can you find all 16 of them?

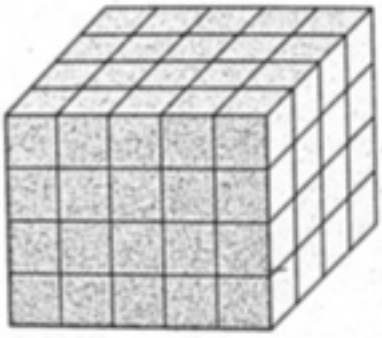
Once you have found them, what is the sum of their values? Write your answer as a Roman numeral.

Answer: .....

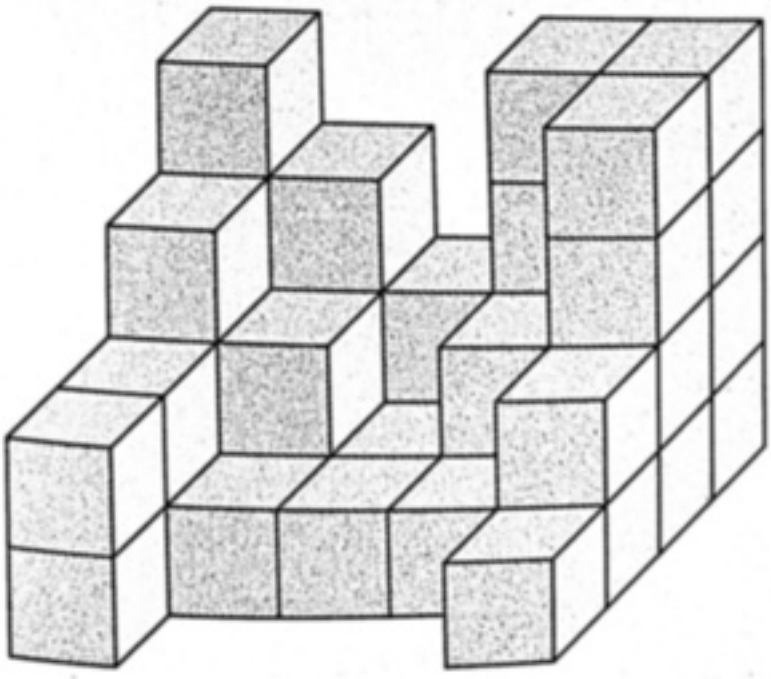


TIME _____

MATHS PUZZLE 61



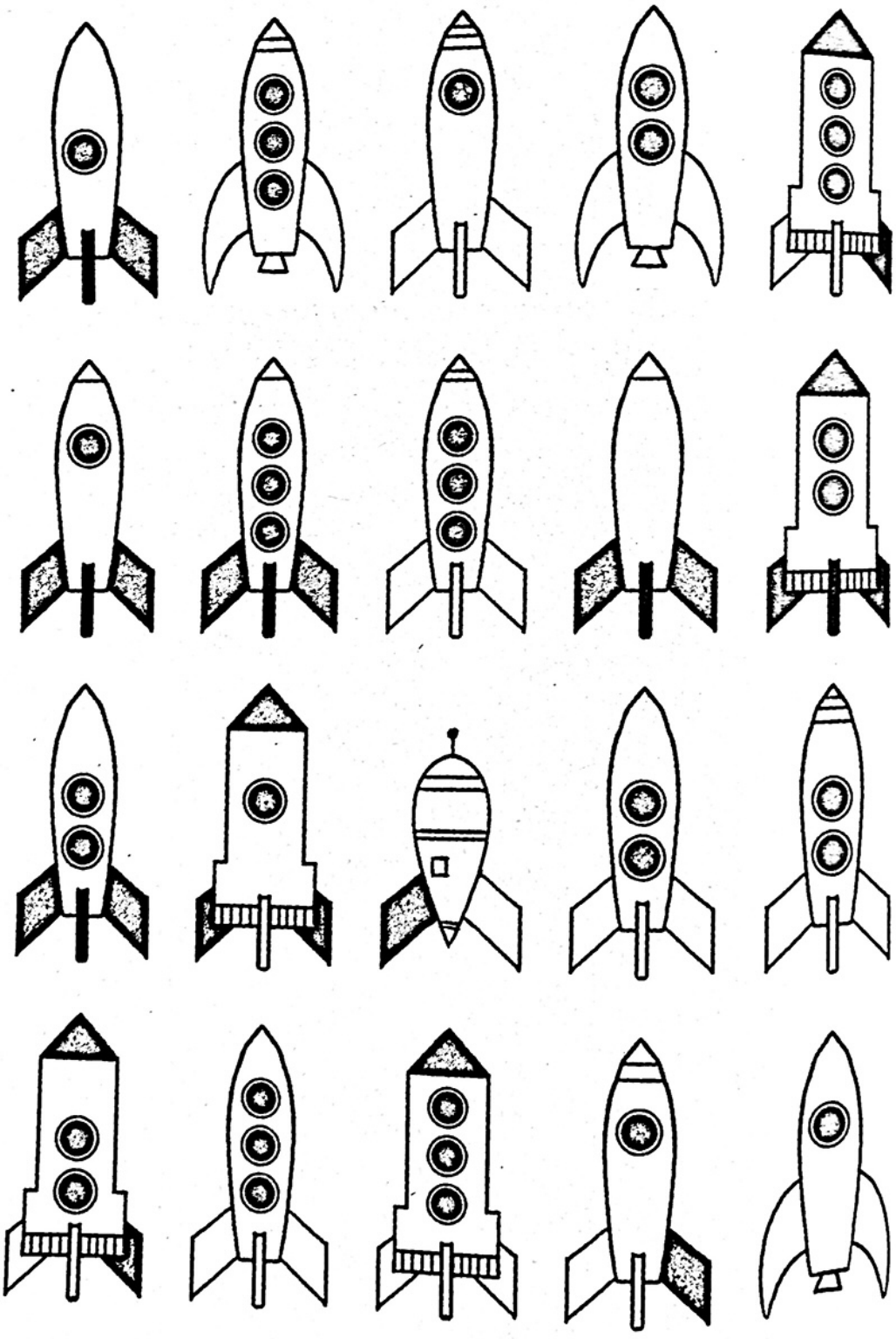
How many cubes can you count in the picture below? It started off as the 5x4x4 stack of cubes shown above, and then some were removed. None of the cubes are 'floating' in the air, so if there is a cube on a layer above the bottom one then you can be certain that all of the cubes beneath it are still there too.



Answer: There are ..... cubes

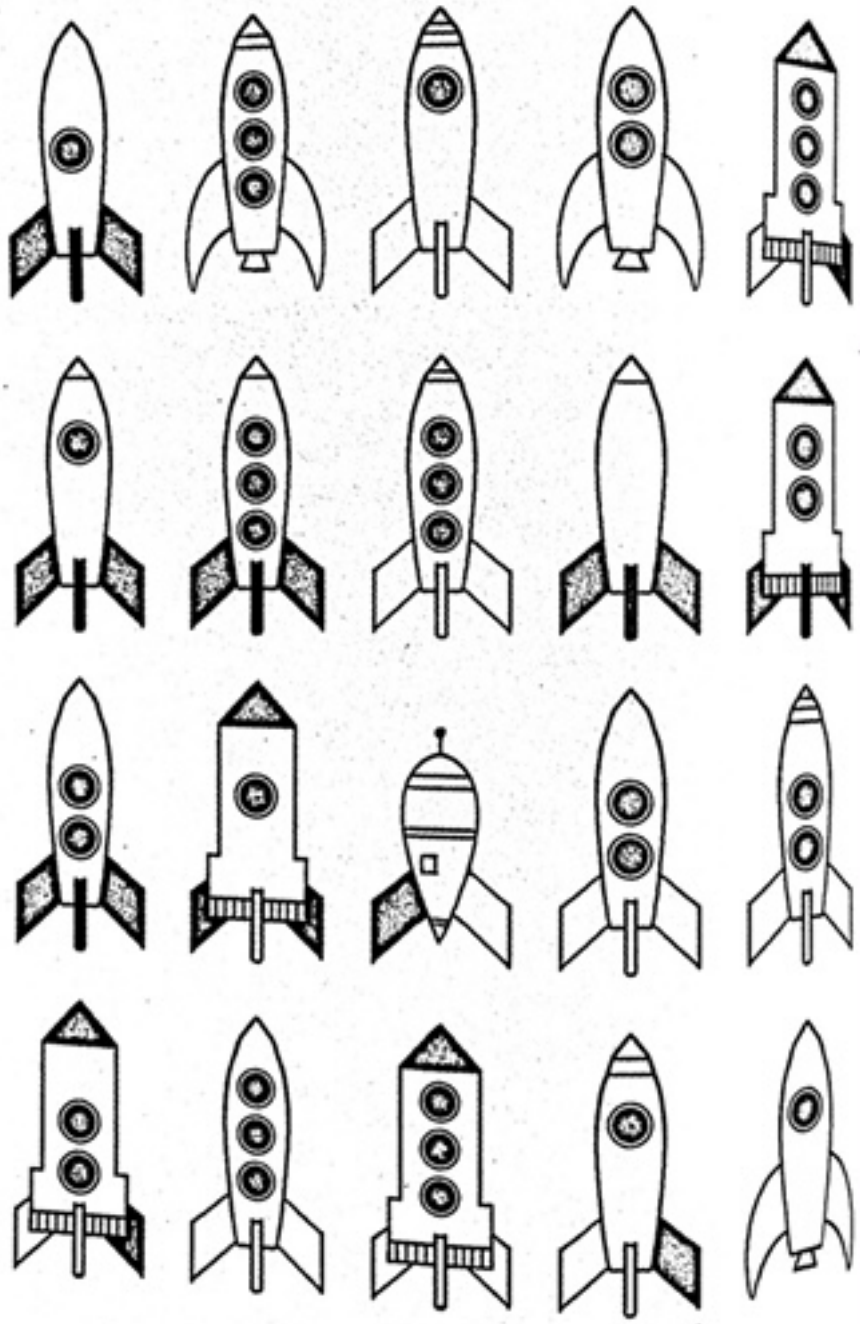
MATHS PUZZLE 62

Look at all these spaceships.

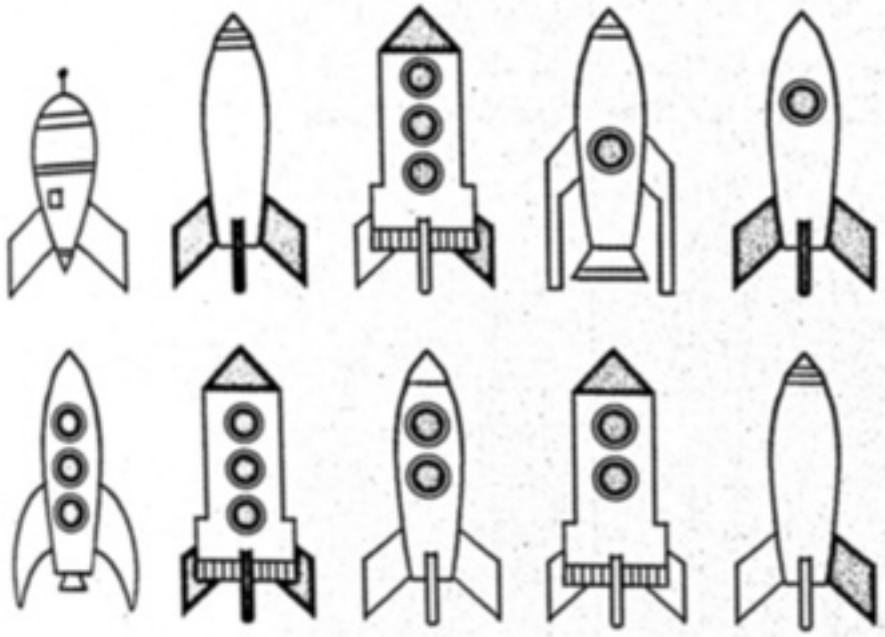


MATHS PUZZLE 62

Look at all these spaceships.



TIME _____



In each of the following questions, simplify your fractions if you can. For example, 6/8 could be simplified to 3/4.

a) What fraction of the rockets have two or more stripes on their nose? (The nose is the top part of the rocket)

Answer: .....

b) What fraction of the rockets with curved fins have three windows?

Answer: .....

c) What fraction of the spaceships with an odd number of circular windows have a black nose?

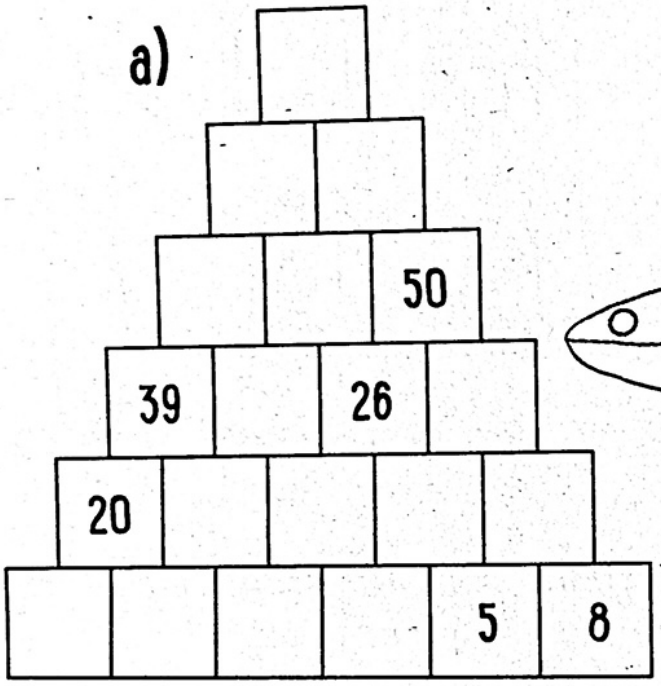
Answer: .....

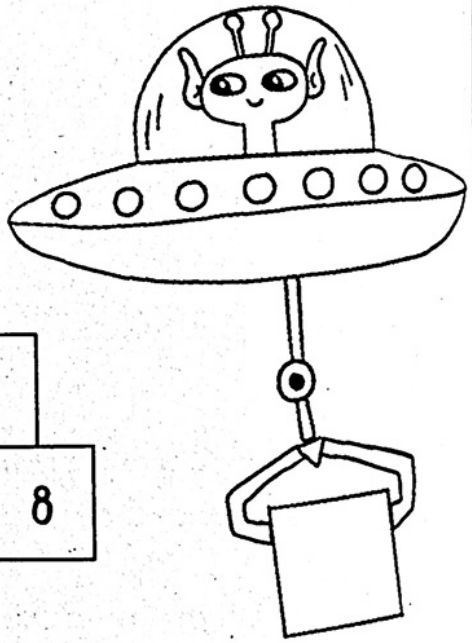
MATHS PUZZLE 63

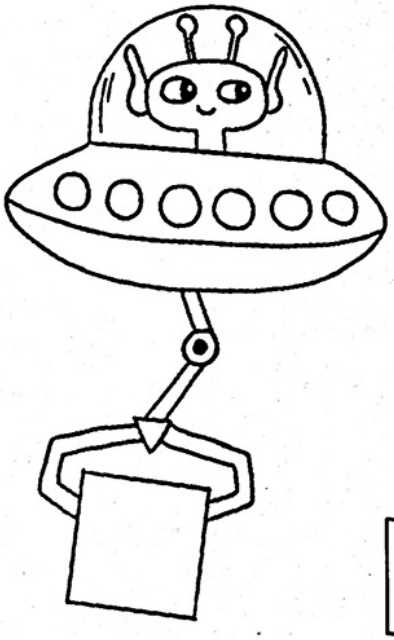
TIME .....

Can you conquer these number pyramids by making sure that every block above the bottom layer is equal to the sum of the numbers of the two blocks directly beneath it?

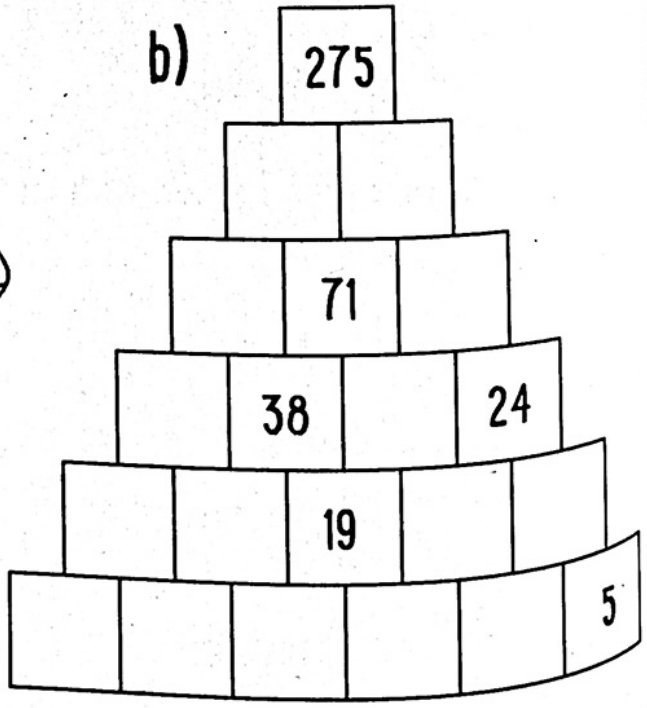
a)







b)



TIME _____

MATHS PUZZLE 64

Which is the odd number out in each of these two mathematical sets? All of the other numbers share the same property (such as, for example, all being multiples of 5), except for one.

a)

27	102	75
48	56	93

Answer: ..... Is the odd number out

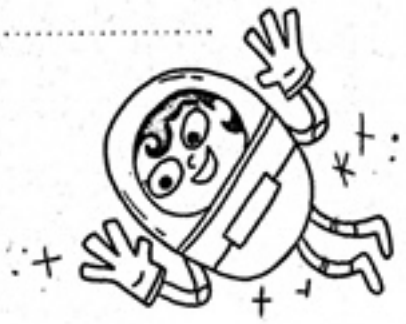
because .....

b)

16	121	81
35	25	64

Answer: ..... Is the odd number out

because .....

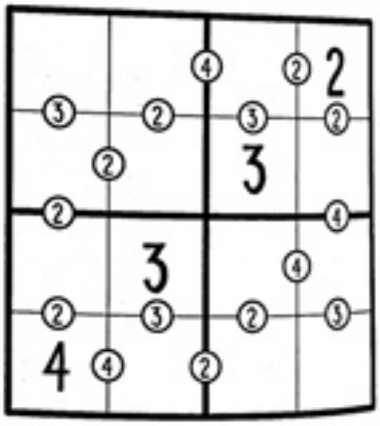


MATHS PUZZLE 65

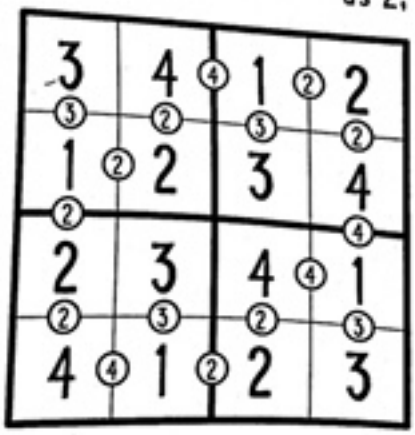
To solve the multiples sudoku puzzle on the opposite page, place 1 to 6 once each into every row, column and bold-lined box, just like in regular sudoku.

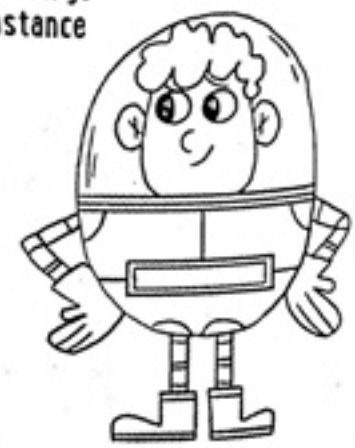
When two touching squares are joined by a small circled number, it shows that there's a multiple bond between the connected numbers. The circle tells you how many times larger one number is than the other, so for example if it contains a '3' then you know that one number is three times as large as the other.

Here's an example:

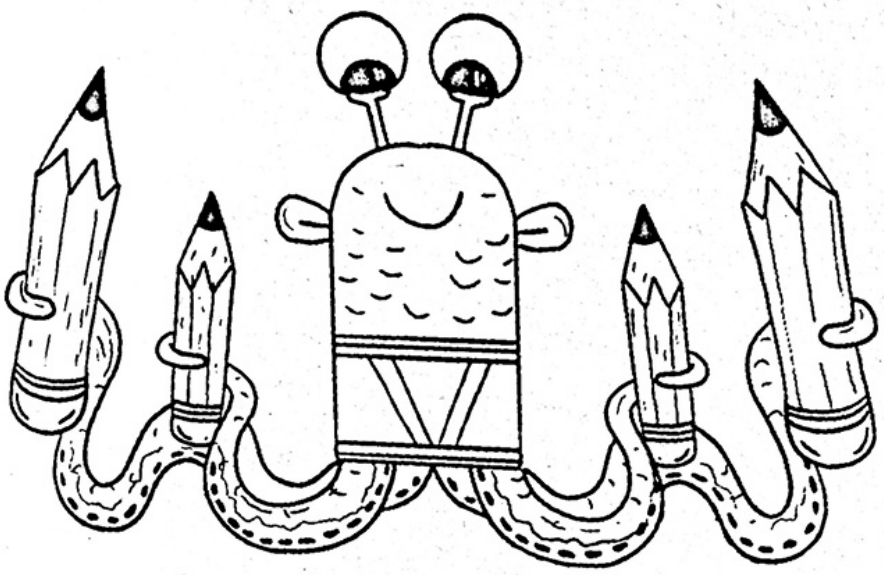


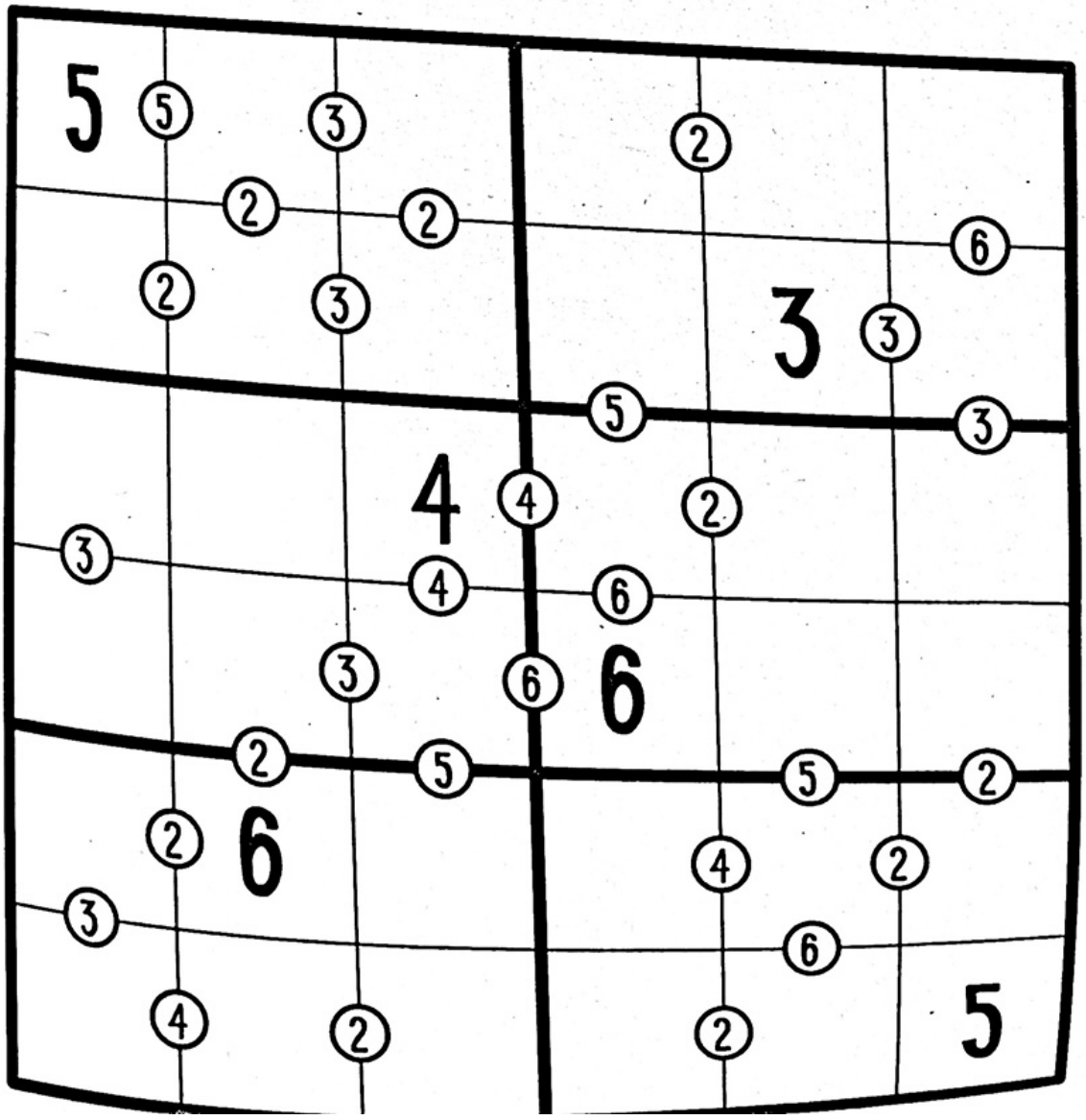
4 is twice as large as 2, for instance





TIME .....





MATHS PUZZLE 66

TIME .....

Can you work out which number should come next in each of these mathematical sequences, and why?

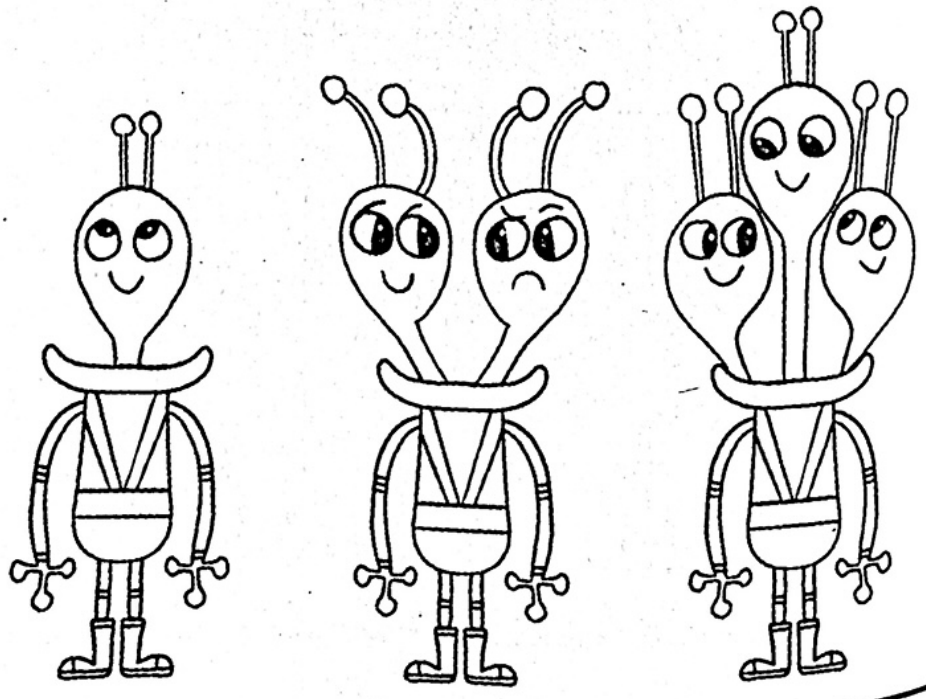
a) 3 9 15 21 27 33 .....

b) 1458 486 162 54 18 6 .....

c) 1 4 9 16 25 36 .....

d) 16 8 4 2 1 1/2 .....

e) 0.3 0.6 0.9 1.2 1.5 1.8 .....



TIME _____

MATHS PUZZLE 67

To solve this Calcudoku puzzle, place 1 to 4 once each into every row and column. You must place these numbers so that the values in each bold-lined region of grid squares multiply to make the small number printed in the top left-hand corner of that region.

Here's a finished example:

2× 1	2	12× 3	4
6× 2	4× 1	4	3× 3
3	8× 4	2	1
12× 4	3	2× 1	2

The numbers in each bold segment multiply together to equal the small number in the corner. For instance, 4 x 3 = 12 in this bold segment

18×			8×
	12×	2×	
4×			24×

MATHS PUZZLE 68

TIME .....

Can you add or subtract each of these pairs of times, and write the resulting time in the corresponding empty box? The times u the 24-hour clock, and you should add or subtract the number of hours and minutes shown to get the final resulting time.

22:25 - 17:25 = ☐

13:20 - 05:50 = ☐

23:55 - 12:55 = ☐

00:50 + 08:20 = ☐

09:20 + 02:20 = ☐

08:25 + 03:10 = ☐

07:55 - 04:25 = ☐

23:25 - 00:55 = ☐

18:10 - 16:50 = ☐

15:25 - 08:40 = ☐

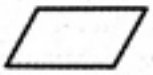
TIME .....

MATHS PUZZLE 69

Welcome to this quaint quadrilateral village, where almost everything has four sides. See how many of the following shapes you can spot and write your answers underneath.

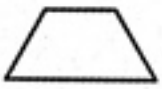
Diamonds .....

Kites .....

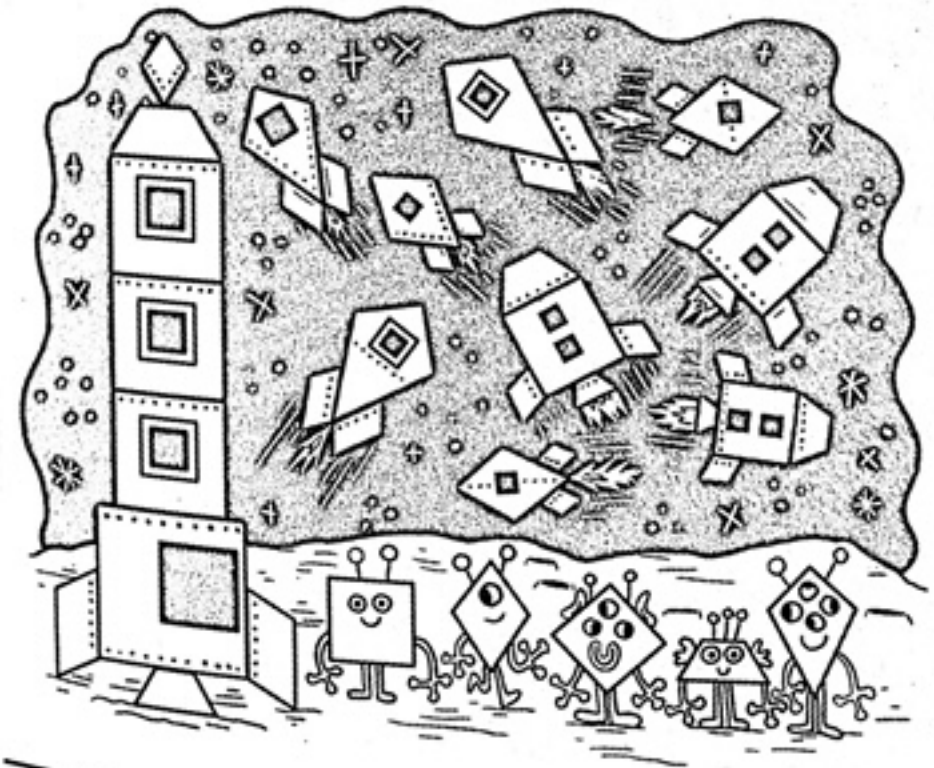


Parallelograms .....

Squares .....



Trapeziums .....



MATHS PUZZLE 70 →

TIME .....

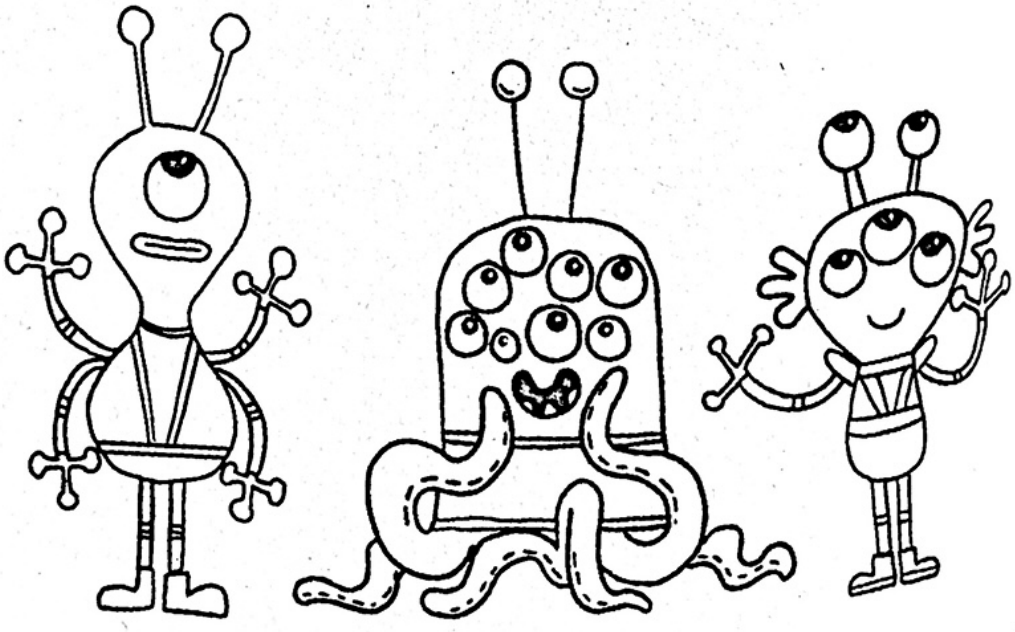
Can you complete an intergalactic mission by solving these space-based puzzles?

a) Every day consists of 24 hours. If I spend 3 hours in the lunar rover, what percentage of the day is this?

Answer: .....

b) If my spaceship completes five full orbits of the moon, plus half an additional orbit, then how many degrees has it rotated in total?

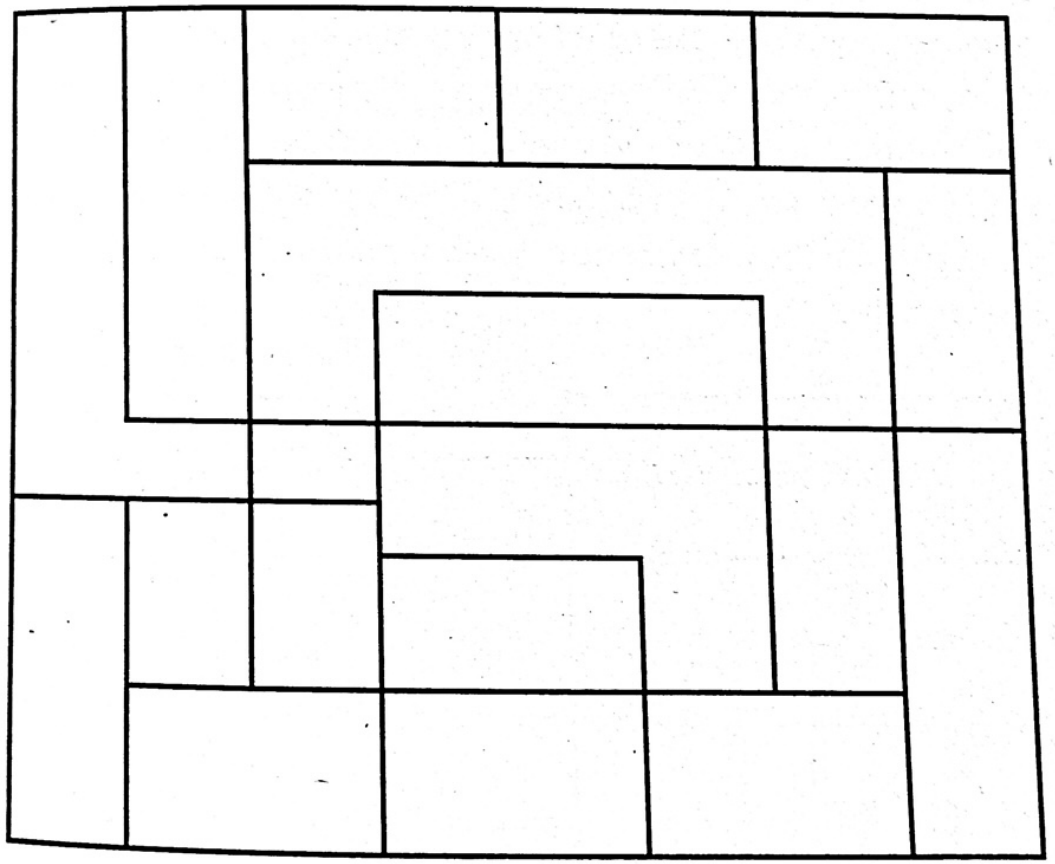
Answer: .....

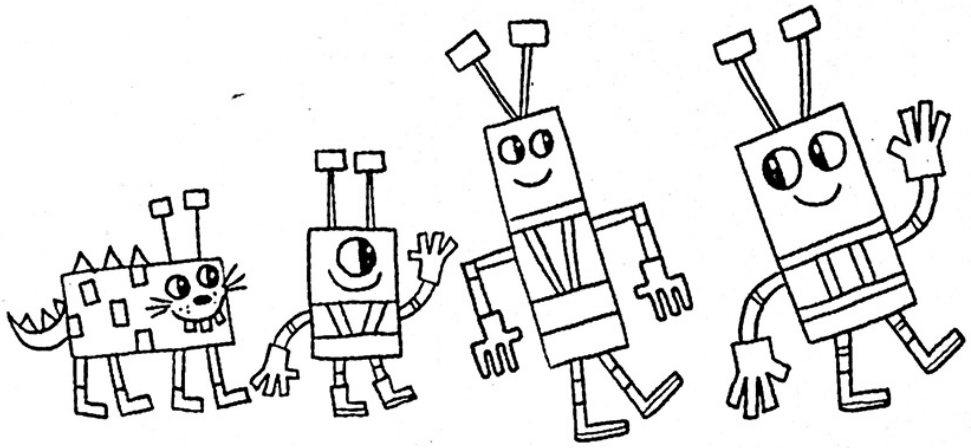


TIME .....

MATHS PUZZLE 71

How many rectangles can you count in this image? Include every one you can find, including the large one all around the edge of the image. Don't forget that smaller rectangles can be blocked together to create bigger rectangles.





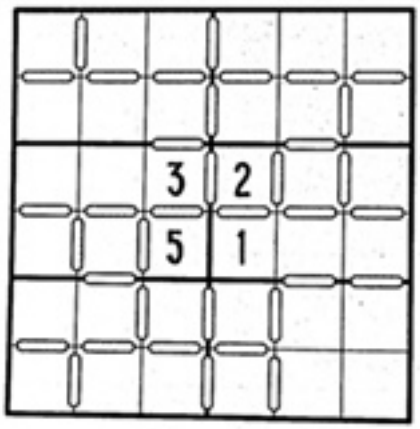
There are ..... rectangles.

MATHS PUZZLE 72

To solve the sudoku 1-away/2-away puzzle on the opposite page, place 1 to 6 once each into every row, column and bold-lined 3x2 box, just like in regular sudoku.

Also, wherever a white bar joins two touching squares, then the number in one of those squares is equal to the number in the other plus one. And, wherever a grey bar joins two touching squares, then the number in one of those squares is equal to the number in the other plus two. If there is no bar between the squares, then they do not have a numerical difference of either one or two.

Here's an example:



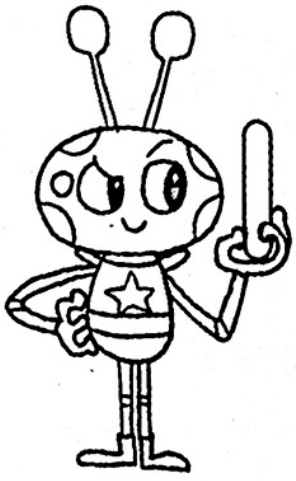
The difference here, for instance, is 1

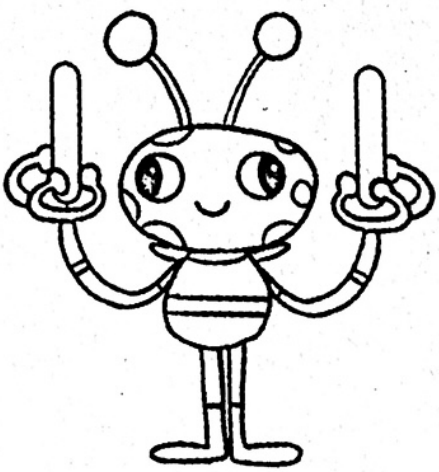
The difference here, for instance, is 2

3	2	6	5	1	4
5	1	4	6	3	2
1	6	3	2	4	5
2	4	5	1	6	3
6	3	2	4	5	1
4	5	1	3	2	6

TIME .....

3					1
4					6





MATHS PUZZLE 73

TIME .....

Can you solve each of these number anagrams? The aim is to rearrange the numbers and the mathematical operators to result in the given value. You can use as many brackets as you like, but you can only use each number and operator once.

For example, given 1, 2, 3, + and ×, you could reach a total of 9 with (1 + 2) × 3 = 9.

a)

1 3 4 10 + - x

Result = 33

Answer: .....

b)

2 3 6 7 - - x

Result = 15

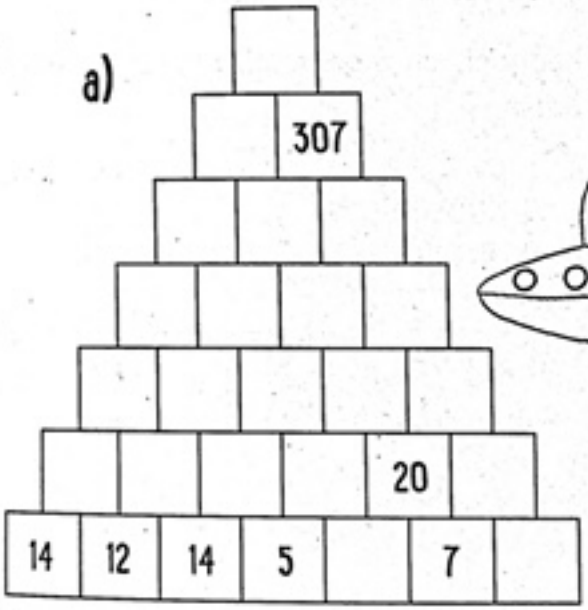
Answer: .....

TIME .....

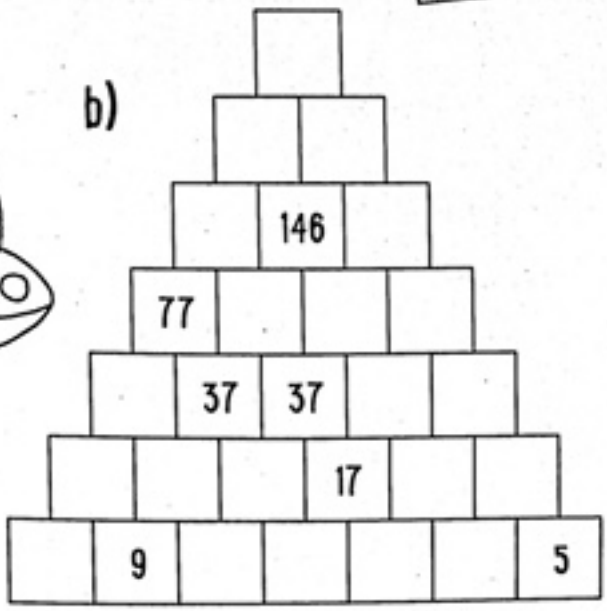
MATHS PUZZLE 74

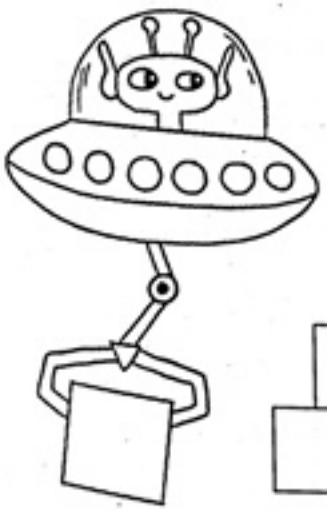
Write a number in each empty pyramid block, so that every block above the bottom layer is equal to the sum of the numbers of the two blocks directly beneath it.

a)



b)





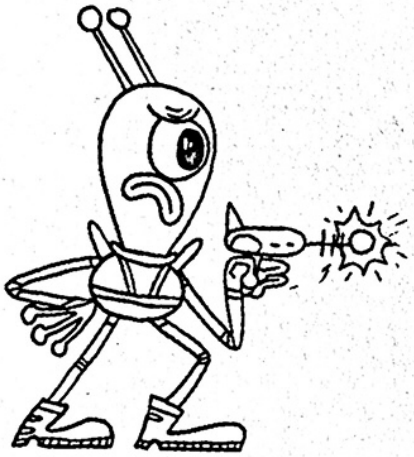
MATHS PUZZLE 75

TIME .....

By adding together some of these numbers, can you make each of the totals below?

11 3 18 8 17 7 4

You can use each number only once per total. You could, for example, form 27 by adding 3 + 17 + 7.



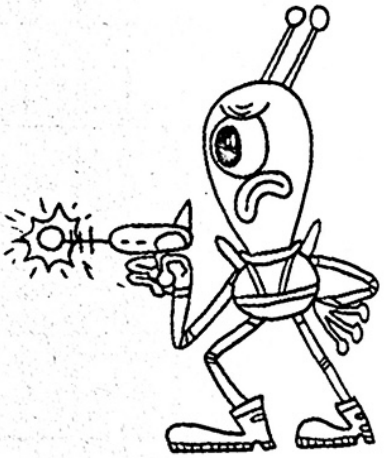
Totals:

10

20

45

60



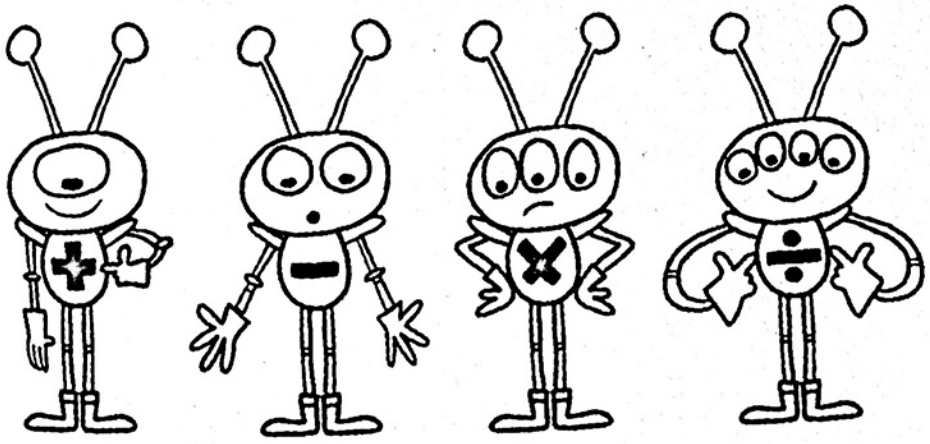
Write your answers below:

TIME .....

MATHS PUZZLE 76

Can you complete each of these mathematical equations, by writing the correct numbers in each empty box?

☐ ÷ 9 = 16	126 ÷ ☐ = 14
7 + ☐ = 61	6 × ☐ = 36
☐ - 18 = 65	2 × ☐ = 16
95 - ☐ = 88	☐ × 10 = 90
☐ - 13 = 13	26 + ☐ = 51
☐ - 27 = 26	50 - ☐ = 36
☐ × 4 = 12	3 × ☐ = 15

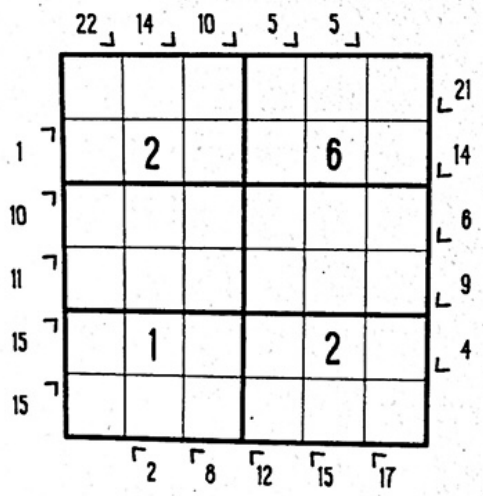


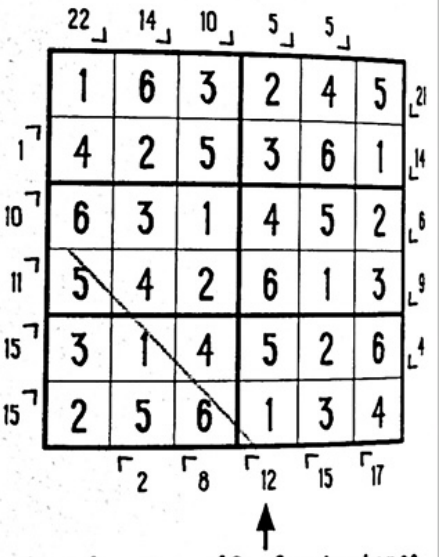
MATHS PUZZLE 77

TIME .....

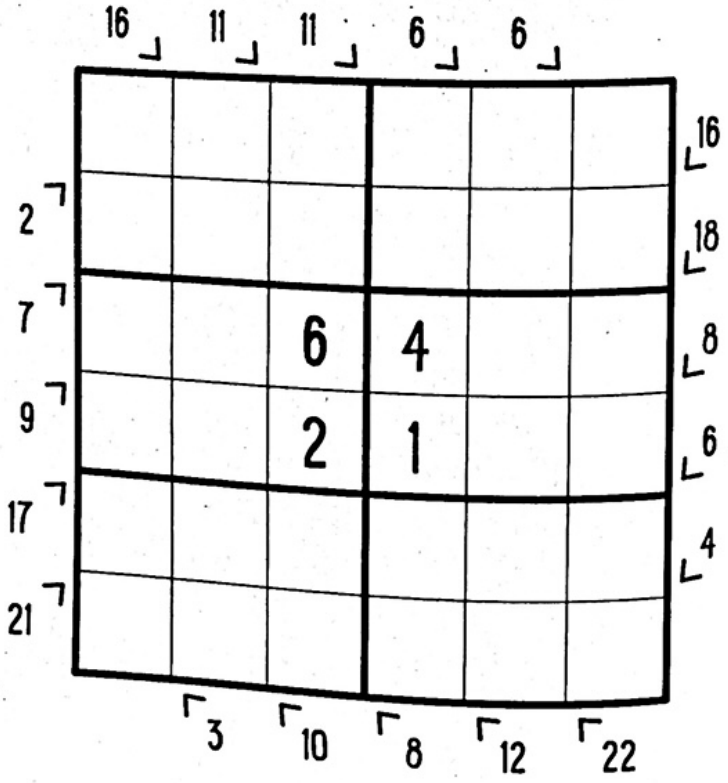
To solve this diagonal sum sudoku puzzle, place 1 to 6 once each into every row, column and bold-lined 3x2 box, just like in regular sudoku. Each of the numbers outside the grid tell you the sum of the diagonal pointed to by its arrow.

Here's an example to show you how the puzzle works:





6 + 1 + 5 = 12, for instance

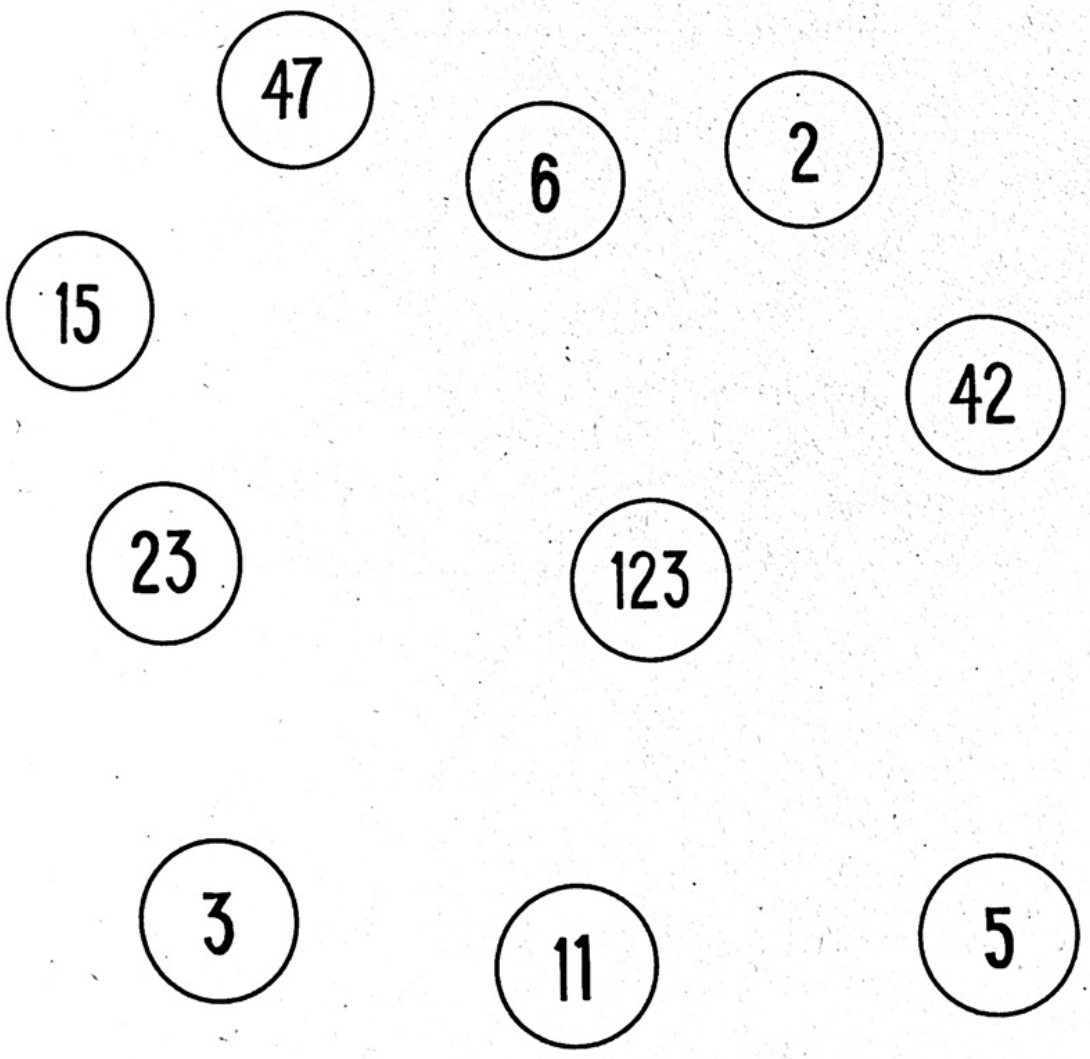


TIME .....

MATHS PUZZLE 78

These 10 numbers can be divided into two mathematical sequences, each of 5 numbers. Draw lines to form a path that joins each sequence of 5 numbers in order. In other words, draw a line from the first number of a sequence to the second number of that sequence, and then from that second number to the third number of the sequence, and so on.

For example, if one sequence was '×2', you could start by drawing a line to join the 3 to the 6.

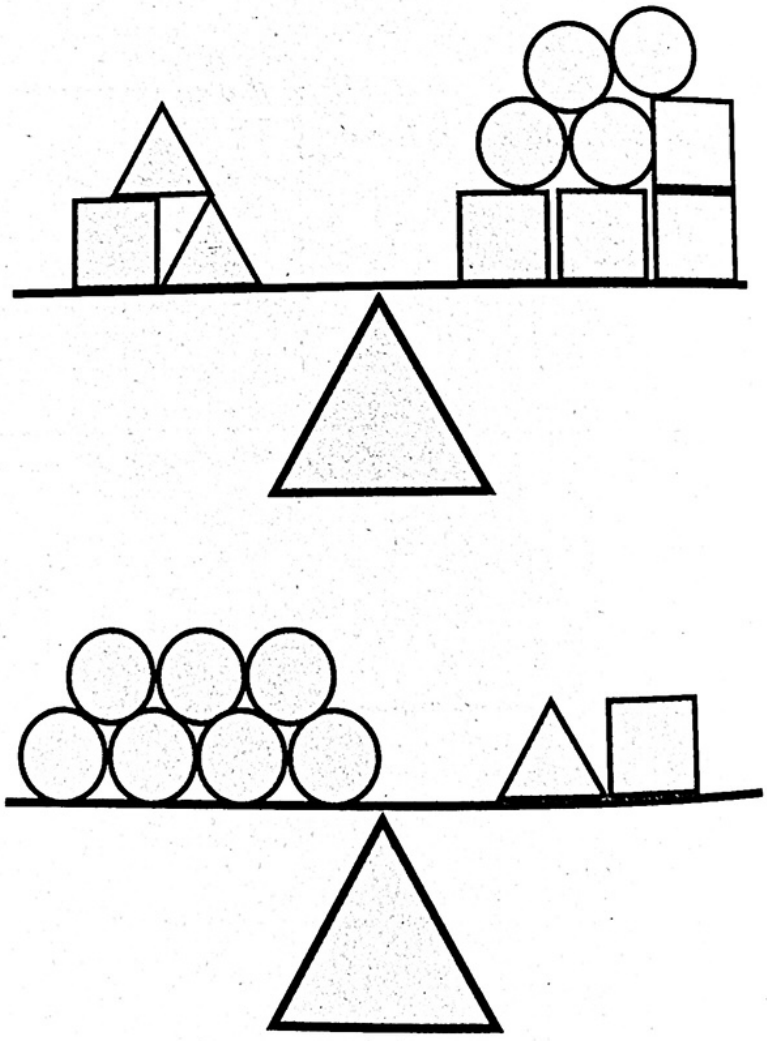


MATHS PUZZLE 79

TIME .....

If the triangle has a weight of 5kg, how much do the circle and the square weigh?

In each of the pictures, assume that the distance from the pivot in the middle is irrelevant.



The circle weighs .....

The square weighs .....

TIME .....

MATHS PUZZLE 80

Can you use each of the percentages at the bottom of the page to join a pair of numbers? Each number, and each percentage, should be used only once. Note that there are multiple ways of joining some pairs, but only one way of doing it which allows everything to be used once each.

For example, you could use 50% to join 32 and 64, since 32 is 50% of 64.

64 60 16

45 12 24 20

150 32 40

20% of ..... Is .....

25% of ..... Is .....

30% of ..... Is .....

50% of ..... Is .....

75% of ..... Is .....

MATHS PUZZLE 81

Can you complete each of these monetary calculations and fill in the answers in the boxes below?

£21.60 - £1.42 = ☐

£2.17 - 76p = ☐

£49.40 - £43.60 = ☐

£32.60 - £2.40 = ☐

£4.83 - £1.02 = ☐

£4.11 + £28.90 = ☐

£38.90 - £29.30 = ☐

£1.18 - 28p = ☐

£2.97 + £4.92 = ☐

£23.90 - £4.94 = ☐

TIME .....

£16.50 - 76p = ☐

£50 - £3.88 = ☐

£1.74 - £1.40 = ☐

£39.10 - £3.54 = ☐

£2.20 + £1.69 = ☐

£48.10 - £14.30 = ☐

£47.60 - 73p = ☐

£10.90 - £4.10 = ☐

£38.40 - 7p = ☐

£2.86 + £43 = ☐

MATHS PUZZLE 82

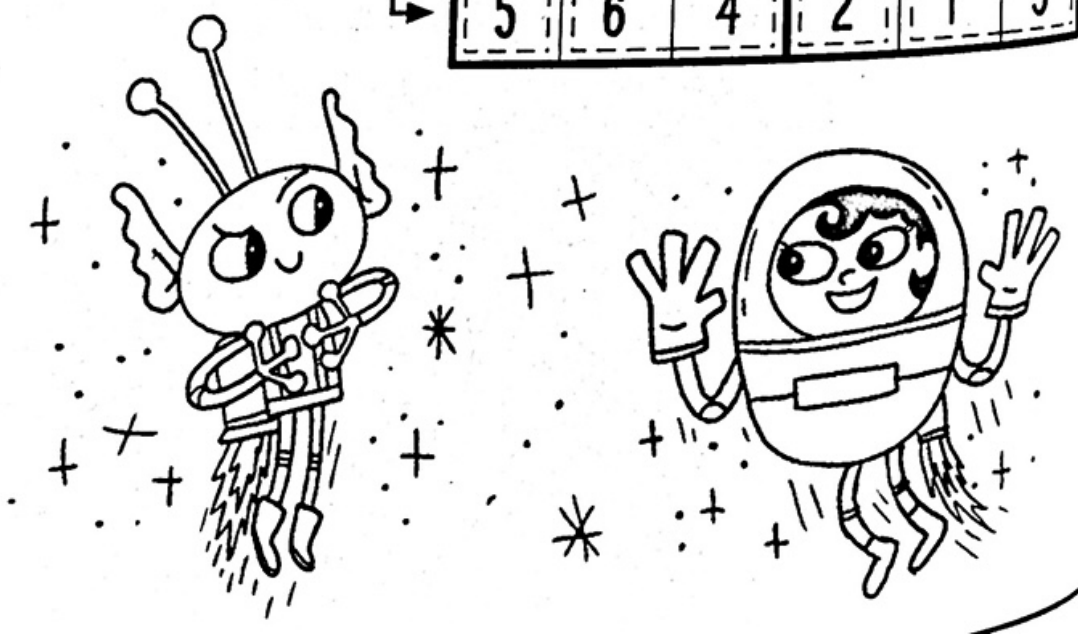
The 'killer sudoku' puzzle on the opposite page is a variation on regular sudoku. Not only must you place 1 to 6 once each into every row, column and bold-lined 3x2 box, but you must also place the numbers so that each dashed-lined region of grid squares adds up to the small number printed in the top left-hand corner of that region.

There's also one important extra rule: you can't repeat a number inside a dashed-lined cage, so for example the solution to the '15' region in this puzzle couldn't be 6+6+3.

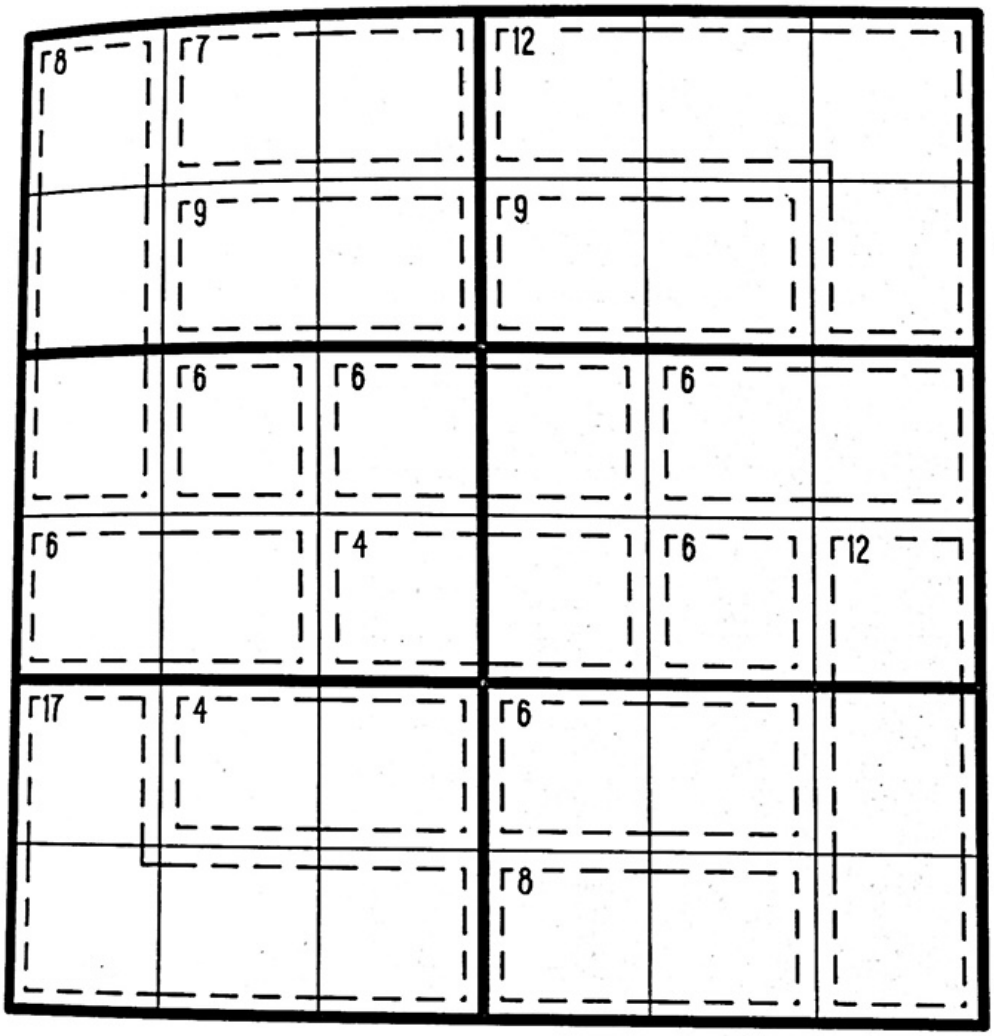
Here's a finished example to show you how the puzzle works:

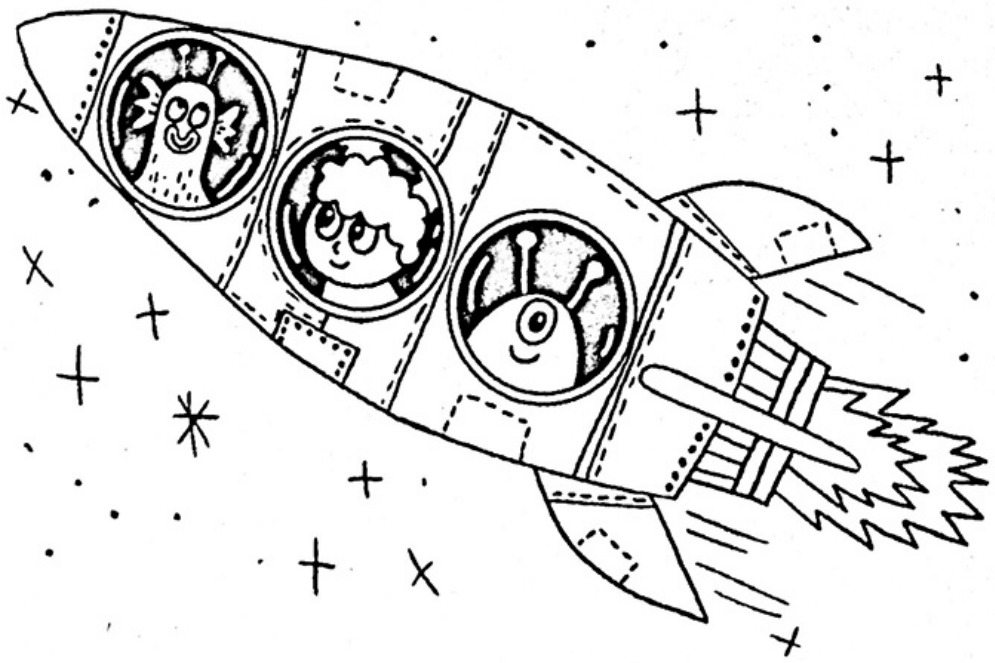
In this dashed-lined cage, for instance, 1 + 3 + 5 = 9

2	4	3	1	5	6
6	5	1	3	2	4
4	2	6	5	3	1
1	3	5	6	4	2
3	1	2	4	6	5
5	6	4	2	1	3



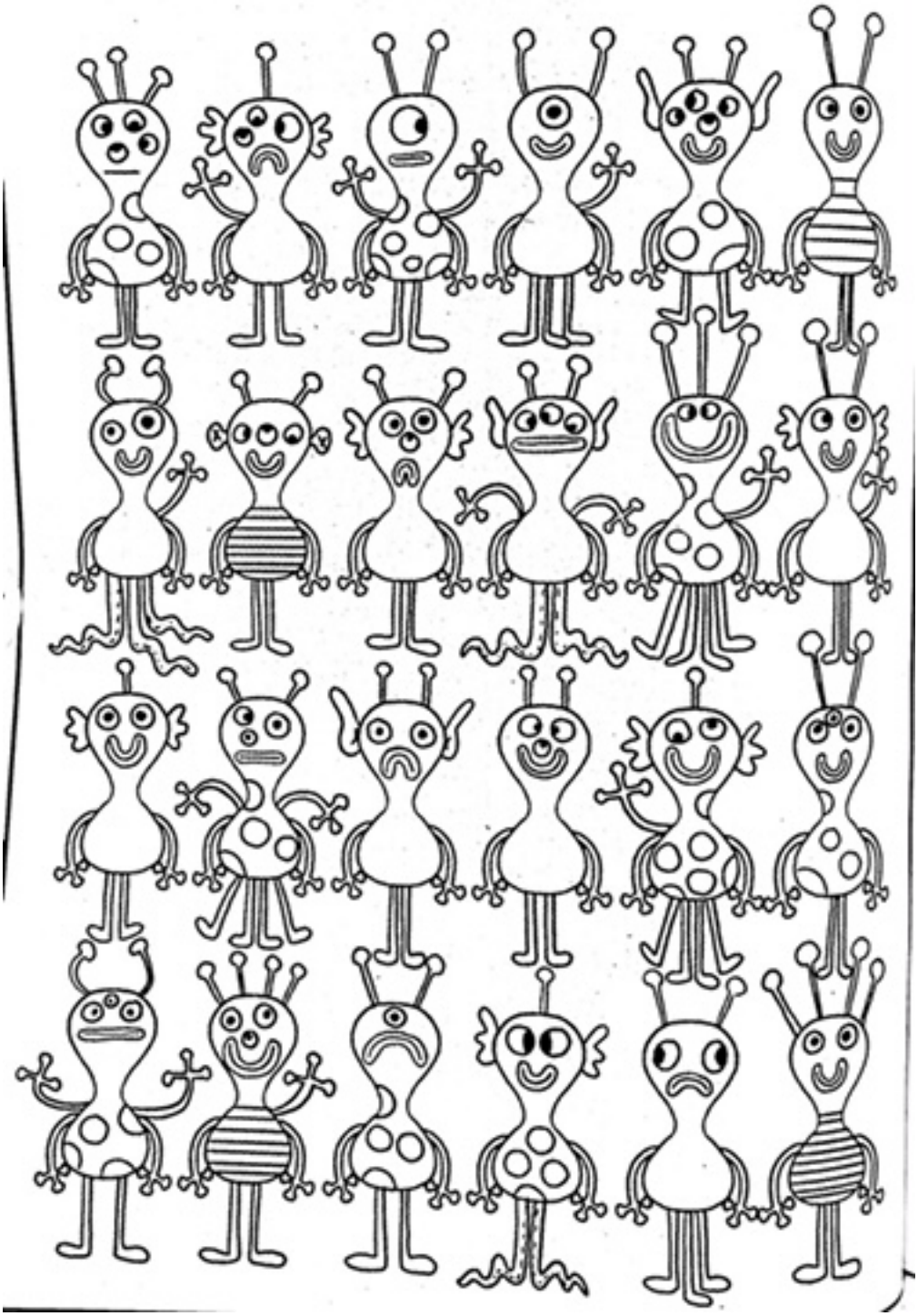
TIME .....



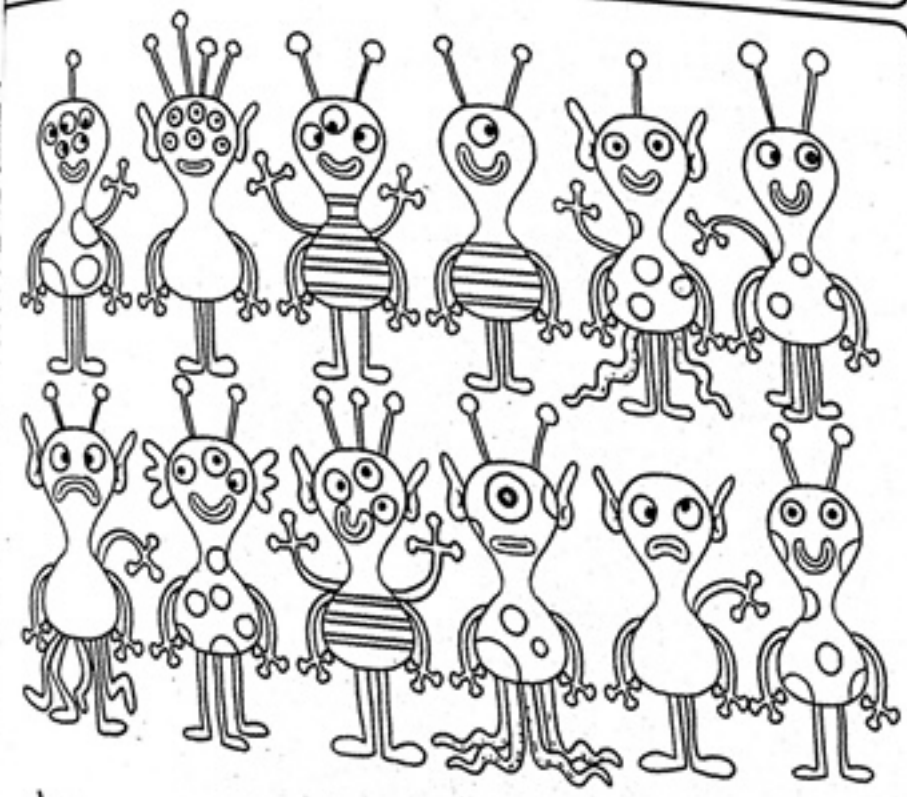


MATHS PUZZLE 83

Look at all of these lovely aliens.



TIME _____



a) How many aliens have four or more eyes?

Answer: .....

b) How many of the aliens have more antennae than eyes?

Answer: .....

c) How many antennae does the alien with the greatest total number of arms, lower limbs and eyes have?

Answer: .....

MATHS PUZZLE 84

TIME .....

Can you form each of the given totals, by choosing one number from each ring of this dartboard?

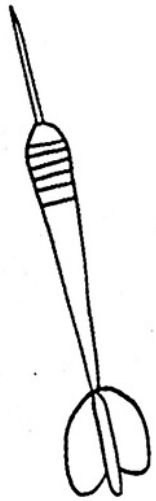
For example, you could form a total of 42 by picking 13 from the innermost ring, 14 from the middle ring and 15 from the outermost ring. You can't pick from the same ring more than once per go.

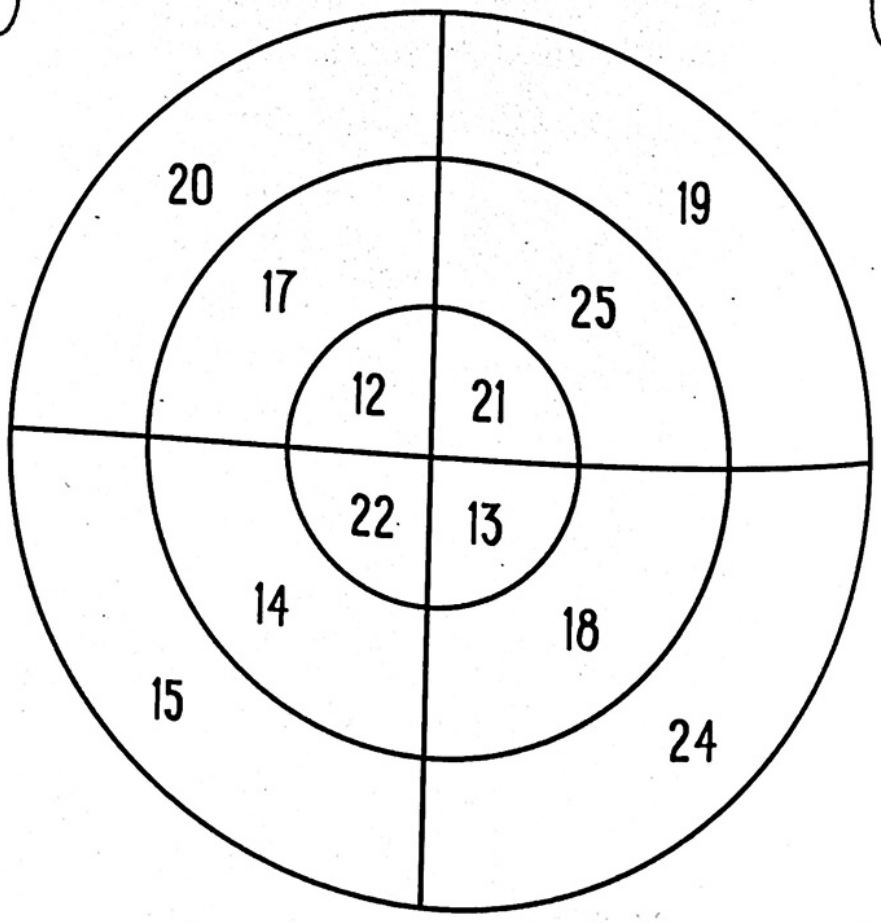
Totals:

48 = ...

64 = ...

70 = ...



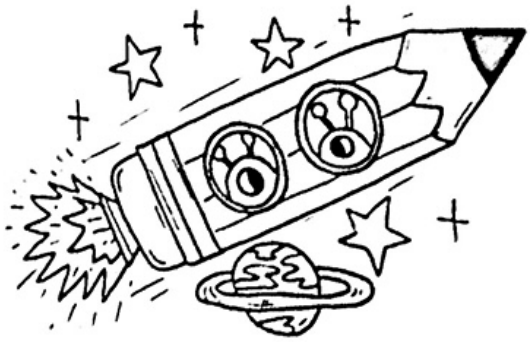


TIME .....

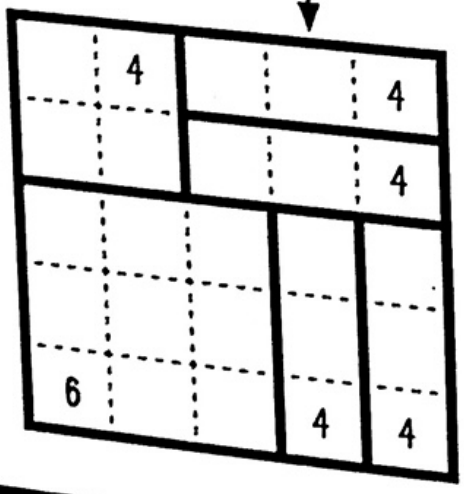
MATHS PUZZLE 85

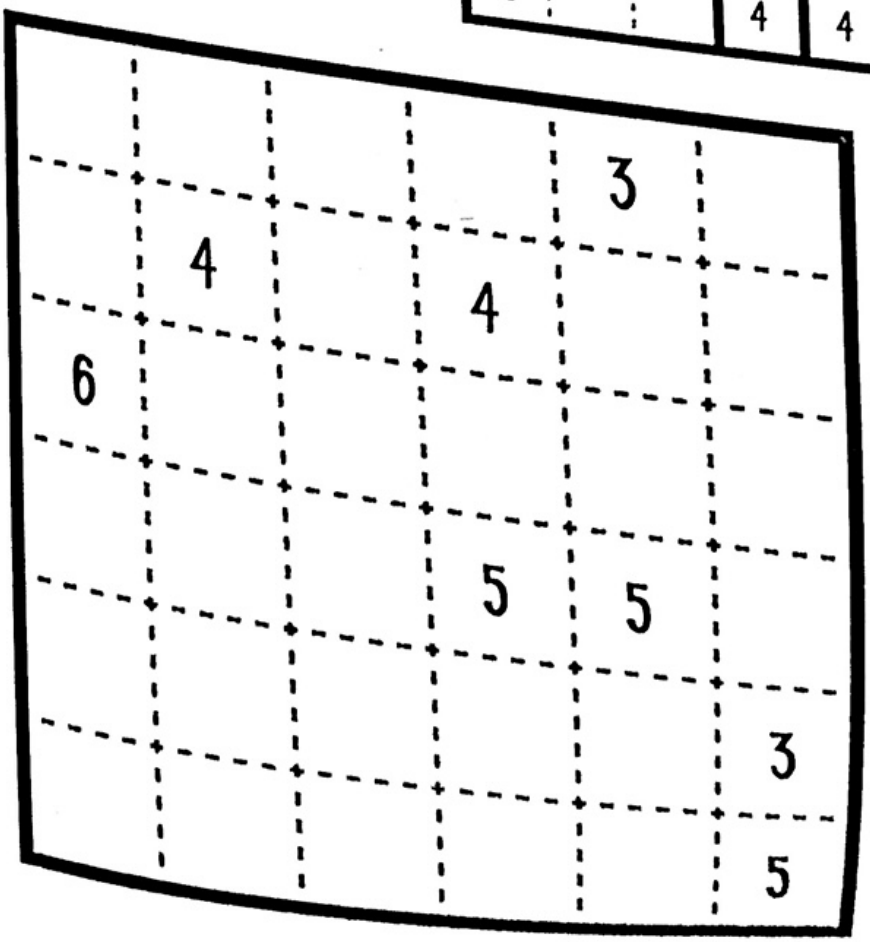
Draw lines along some of the gridlines in order to divide the grid up into a set of rectangles and squares. Each number should be inside exactly one rectangle or square, and the sum of the width plus height of the rectangle or square must be equal to the value of that number.

Here's a finished example:



This rectangle is 1 square high by 3 squares wide: 1 + 3 = 4





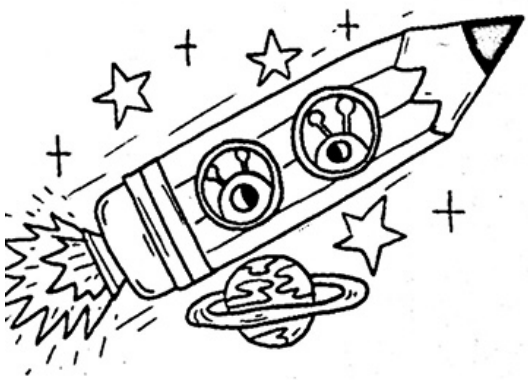
TIME .....

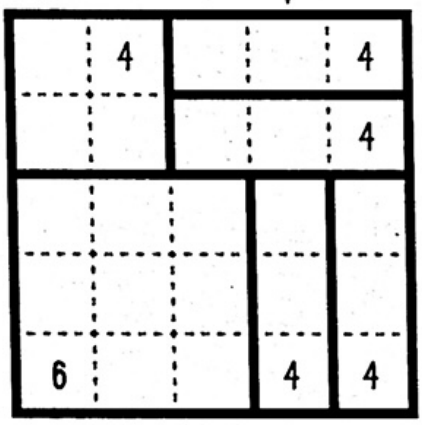
MATHS PUZZLE 85

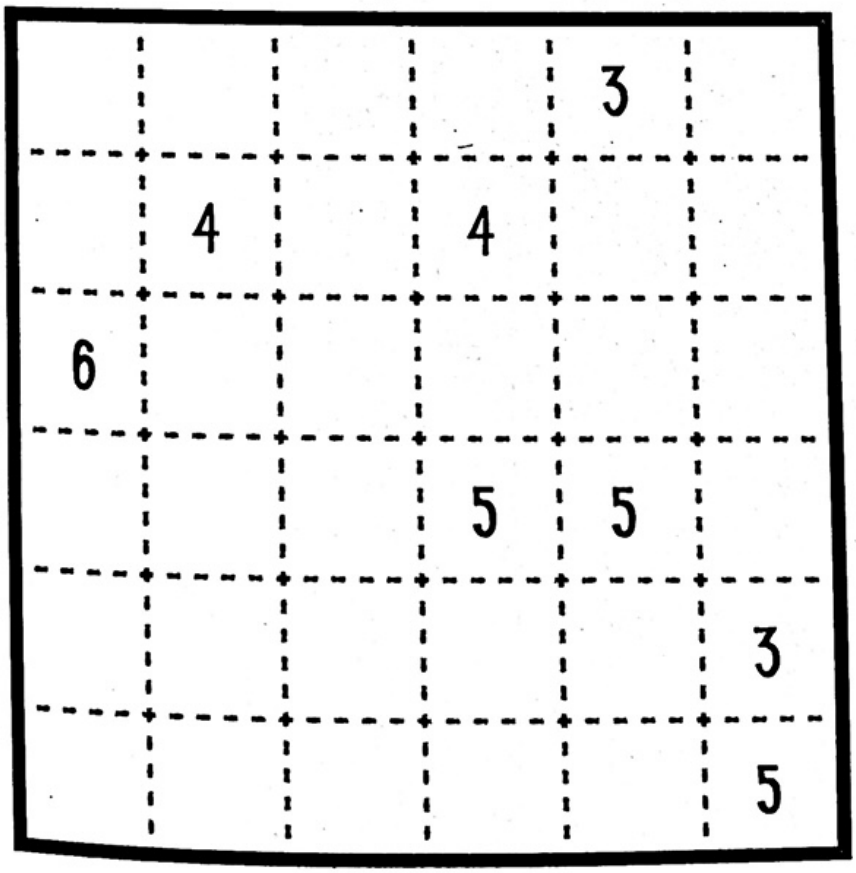
)raw lines along some of the gridlines in order to divide the grid
p into a set of rectangles and squares. Each number should be
nside exactly one rectangle or square, and the sum of the width
lus height of the rectangle or square must be equal to the value
f that number.

This rectangle is 1 square high
by 3 squares wide: 1 + 3 = 4

Here's a finished example:







MATHS PUZZLE 86

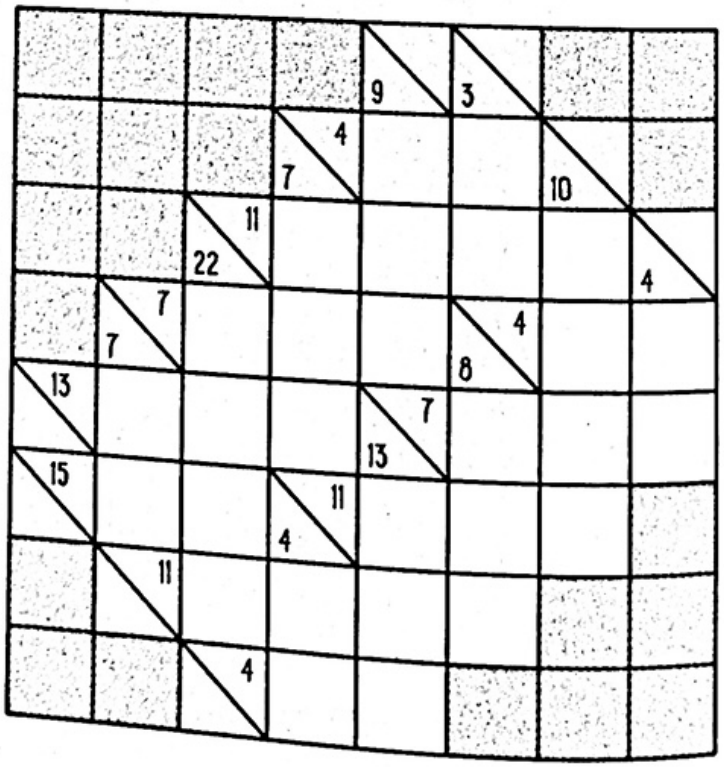
TIME .....

This is a kakuro puzzle. Can you place a number from 1 to 9 in each white square, so that each 'run' of continuous horizontal or vertical white squares adds up to the number given to the left or the top of that 'run'? You can't repeat a number within any 'run', so for example you could form a total of 4 with 1+3, but not with 2+2.

Here's a finished example:

	14	13				3	4
6	5	1			17	1	3
17	9	8	21	7	3	2	1
	10	4	3	1	2		
		7	1	2	4	16	
	16	9	9	4	8	7	17
24	9	7	8		17	8	9
9	7	2			9	1	8

In this 'run', for instance, 1 + 8 = 9 horizontally, and 8 + 9 = 17 vertically



TIME .....

MATHS PUZZLE 87

When you toss a coin you have one of two possible results:
HEADS or TAILS.

a) What is the probability of getting two heads in a row when you toss a coin twice? Write your answer as a fraction.

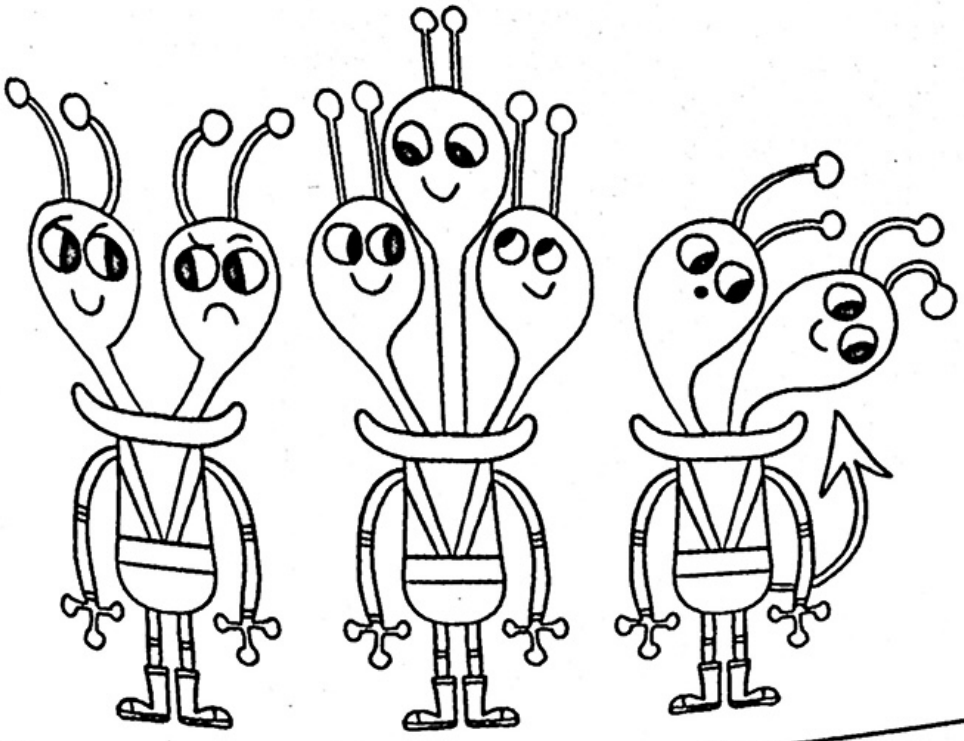
Answer: .....

b) And what is the probability of getting three heads in a row when you toss a coin three times? Write your answer as a fraction.

Answer: .....

c) If I toss a coin three times, what is the probability of getting two heads and one tail? Write your answer as a fraction.

Answer: .....

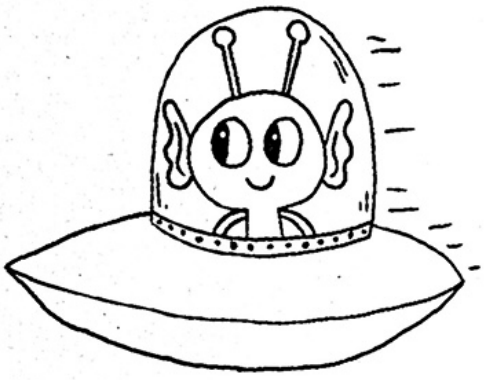


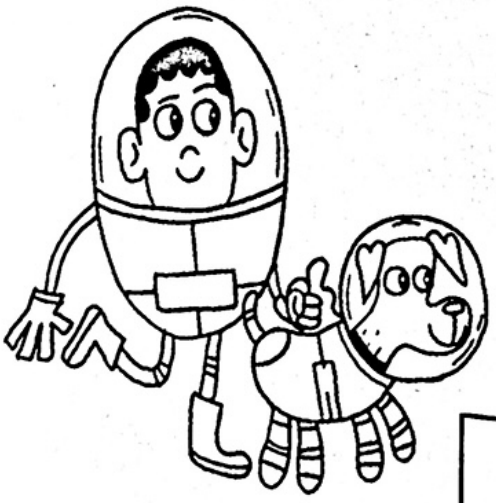
MATHS PUZZLE 88

To solve the puzzle on the opposite page, place 1 to 5 once each into every row and column. Every place where a number is higher than the three squares touching one of its corners is marked with an arrow pointing at that corner. So, for example, the 5 in the first column of the puzzle below is greater than the square above it, the square diagonally to the right of it, and the square to the right of it.

	3			
				2
5				
			1	

Here's an example to show you how the puzzle works:



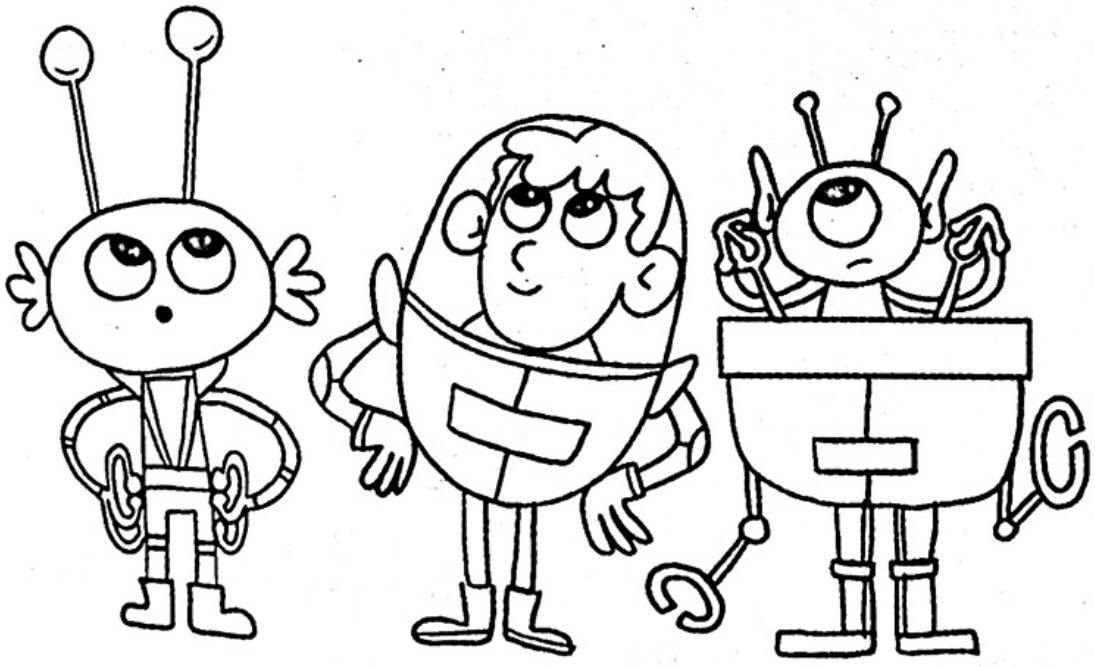


2	3	1	4	5
3	1	4	5	2
①	②	5	3	4
5	④	3	2	1
4	5	2	1	3

5 is greater, for instance, than the 1, 2 and 4 surrounding its arrow

TIME .....

5				1
3				5



MATHS PUZZLE 89

The numbers below add up to 70. By removing some numbers, you can reduce the total. For example, if you remove the 3 and 17 the total is now 50.

3 6 9 10 12 13 17

By removing one or more of the numbers, can you make each of the totals below? Each total can be made in four different ways – can you find all four methods in each case?

HINT: Work out the difference between the total you need and the total of all the numbers. The numbers you need to remove must add up to that difference.

48

Answer 1: .....

Answer 2: .....

Answer 3: .....

Answer 4: .....

TIME .....

42

Answer 1: .....

Answer 2: .....

Answer 3: .....

Answer 4: .....

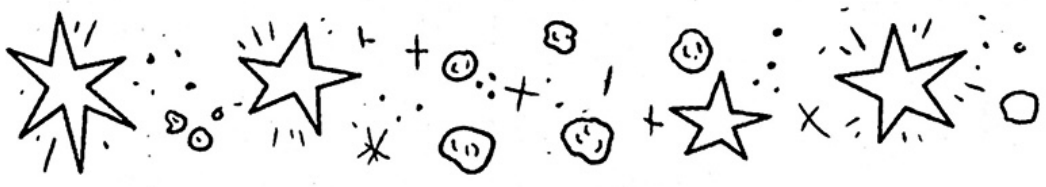
32

Answer 1: .....

Answer 2: .....

Answer 3: .....

Answer 4: .....



MATHS PUZZLE 90 →

TIME .....

To solve this arrow sudoku, place 1 to 6 once each into every row, column and bold-lined 3x2 box, just like in regular sudoku. Each circled number must be equal to the total of the numbers along the length of its attached arrow.

Here's an example to show you how the puzzle works:

	5				
					5
		1	4		
		4	1		
2					
				3	

→

3	5	2	6	1	4
1	4	6	3	2	5
5	2	1	4	6	3
6	3	4	1	5	2
2	6	3	5	4	1
4	1	5	2	3	6

For instance, 6 = 1 + 5 in this arrow link →

		4			
		3			
		6	1	2	4
2	4	1	6		
			5		
			2		

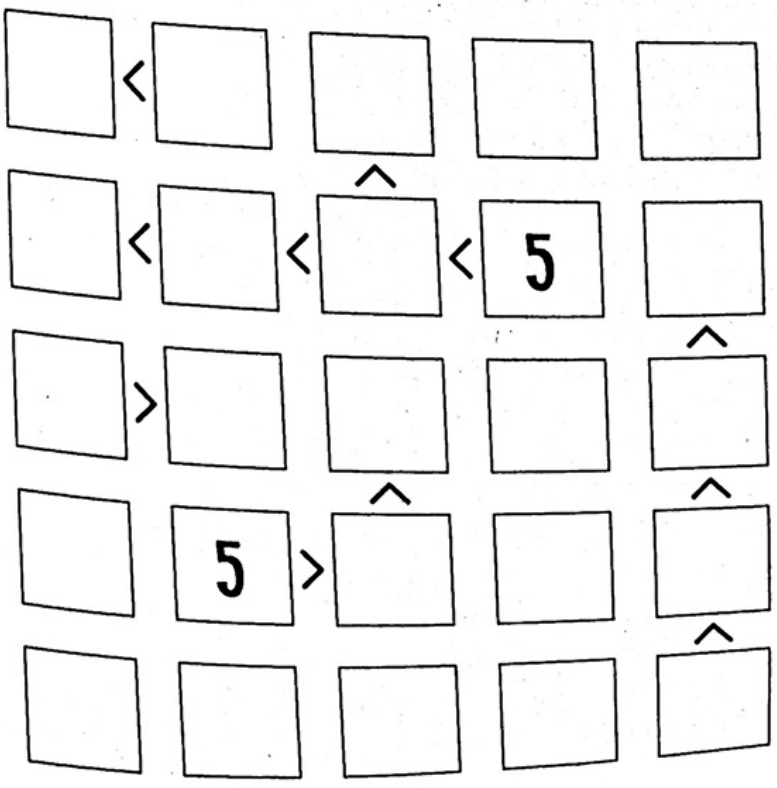
TIME .....

MATHS PUZZLE 91

Solve these Futoshiki puzzles by placing the numbers 1 to 5 once each into every row and column. You must obey the 'greater than' signs. These are arrows which always point from the bigger number to the smaller number of a pair. For example, you could have '2, 3, 4 or 5 > 1' since 2, 3, 4 and 5 are greater than 1, but '1 > 2' would be wrong because 1 is not greater in value than 2.

Here's a finished example:

3	4 >	2	5	1
4 <	5	1	3 >	2
1 <	2	3	4	5
2 <	3	5	1	4
5	1	4	2	3



MATHS PUZZLE 92

TIME .....

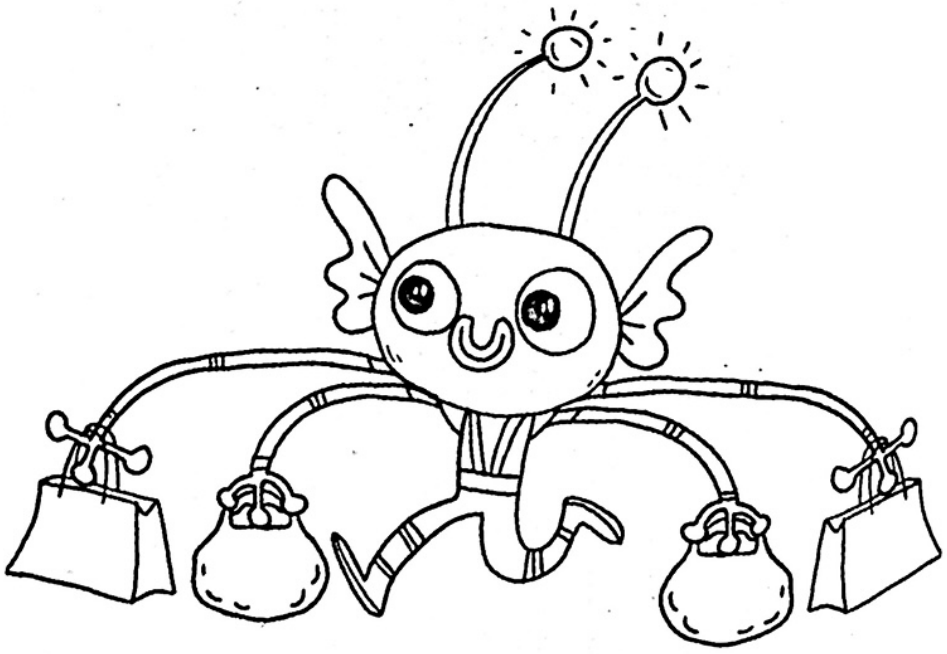
Solve these written puzzles using your marvellous maths skills.

a) In my local shop, a pint of milk costs 55p and a loaf of bread costs £1.20. If I spend exactly £5.80, buying only pints of milk and loaves of bread, then what exactly have I bought?

Answer: .....

b) Last year I planted lots of daffodil bulbs in my garden, but only 65% of them actually grew into plants. Given that I ended up with 78 plants, how many bulbs did I plant?

Answer: .....

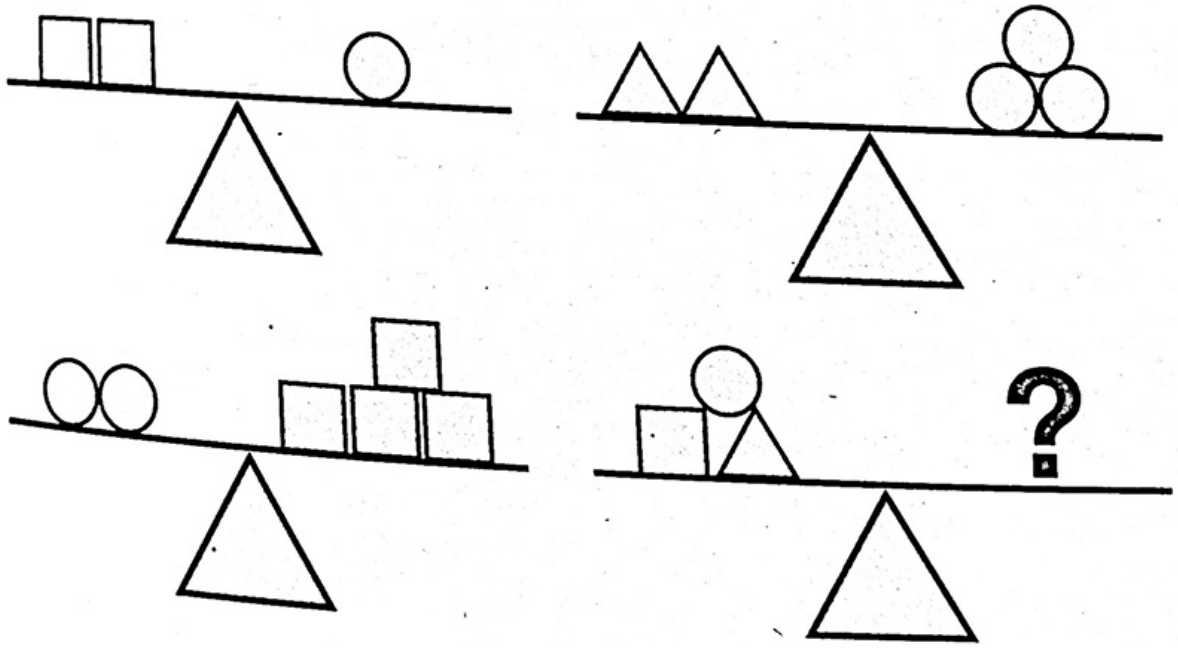


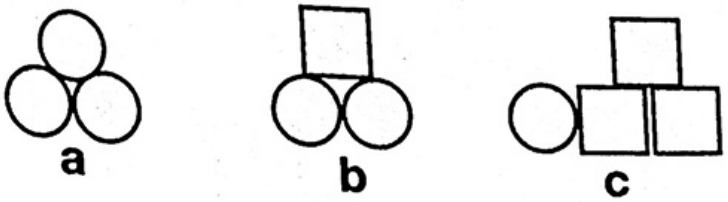
TIME .....

MATHS PUZZLE 93

Which of the pictured options, a, b or c, can replace the question mark to balance the final scale?

In all of the pictures, assume that the distance from the pivot in the middle is irrelevant.





Answer:

MATHS PUZZLE 94 →

TIME .....

Remove exactly one digit from each of the following incorrect equations so that they become correct.

For example, 12 + 3 = 4 would be correct if you deleted the '2' so as to read 1 + 3 = 4.

a) 46 + 37 + 58 = 101

Answer: .....

b) (30 x 50) + (75 x 90) = 1500

Answer: .....

c) 1411 + 1221 + 1311 = 2844

Answer: .....

d) 12 x 13 x 15 x 17 x 19 = 62985

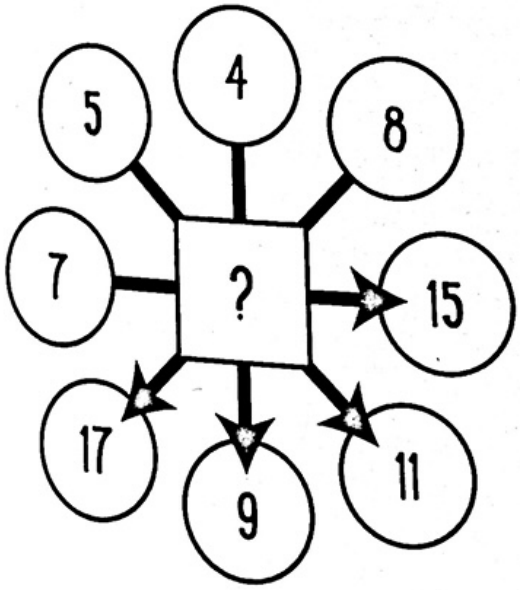
Answer: .....

TIME .....

MATHS PUZZLE 95

Can you work out what is going on in the centre box of each drawing? A hidden mathematical operation is taking place, converting one number to the other. For example, in the first picture, what operation could convert 5 to 11, and 4 to 9, and 8 to 17, and 7 to 15?

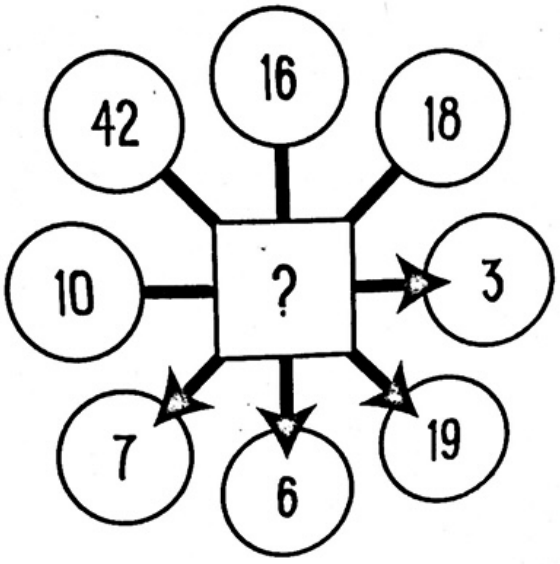
a)



Answer:

.....

b)



Answer:

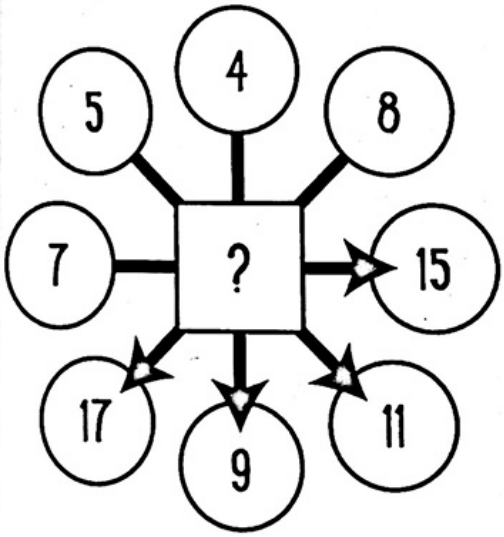
.....

TIME .....

MATHS PUZZLE 95

Can you work out what is going on in the centre box of each drawing? A hidden mathematical operation is taking place, converting one number to the other. For example, in the first picture, what operation could convert 5 to 11, and 4 to 9, and 8 to 17, and 7 to 15?

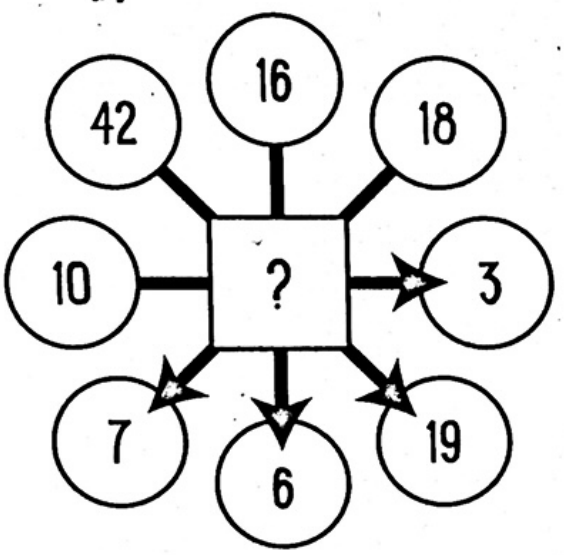
a)



Answer:

.....

b)



Answer:

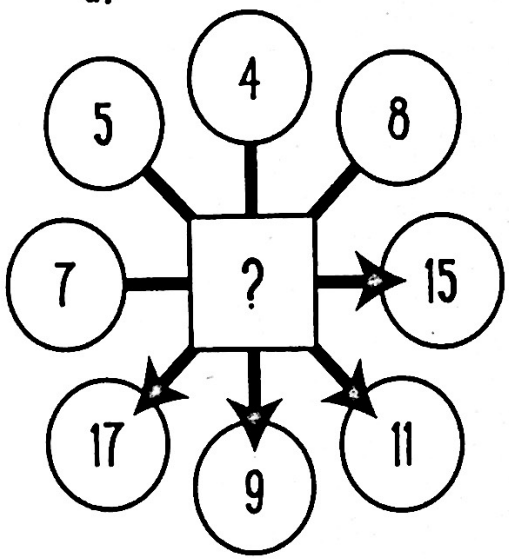
.....

TIME .....

MATHS PUZZLE 95

Can you work out what is going on in the centre box of each drawing? A hidden mathematical operation is taking place, converting one number to the other. For example, in the first picture, what operation could convert 5 to 11, and 4 to 9, and 8 to 17, and 7 to 15?

a)



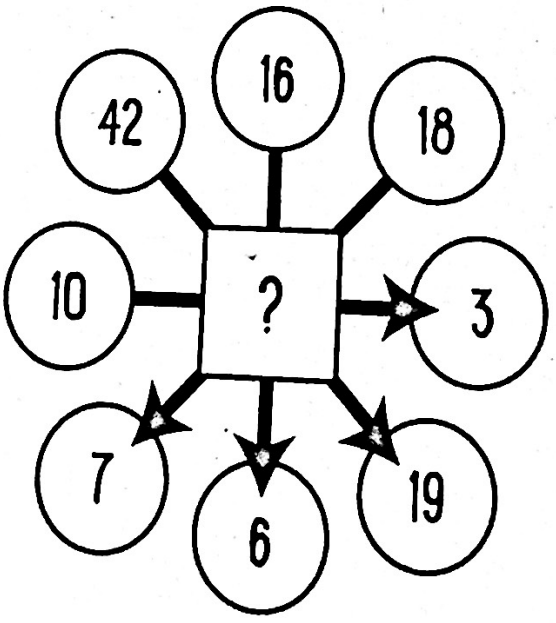
Answer:

.....

b)

Answer:

.....

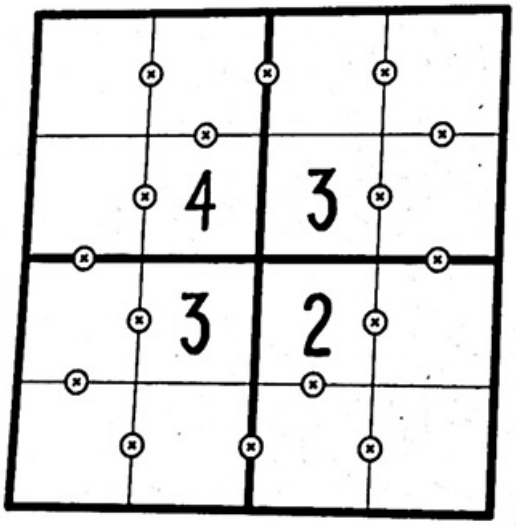


MATHS PUZZLE 96

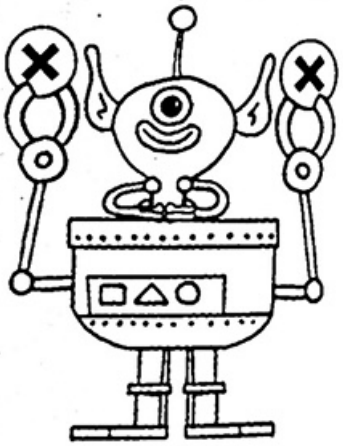
To solve the hidden multiples sudoku puzzle on the opposite page, place 1 to 6, once each into every row, column and bold-lined box, just like in regular sudoku.

Also, every place where two touching squares contain values where one is an integer (whole number) multiple of the other is marked with a circle containing a multiplication sign between the two squares. For example, if one square contains a value which is three times the value of the other, there will be a circle on the joining line between those two squares.

Tip: A '1' will always have a circle on every side of it, so you can fill all the '1's in right away.

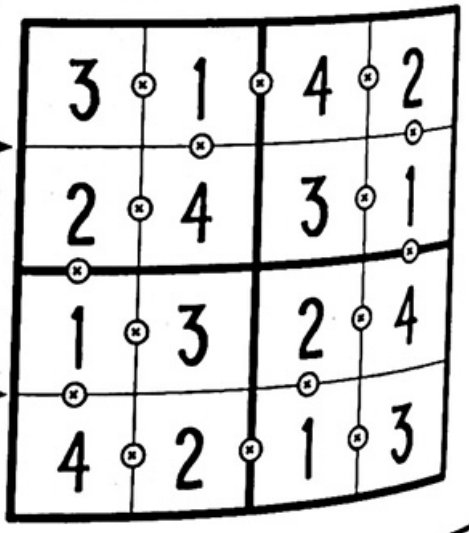


Here's an example to show you how the puzzle works:

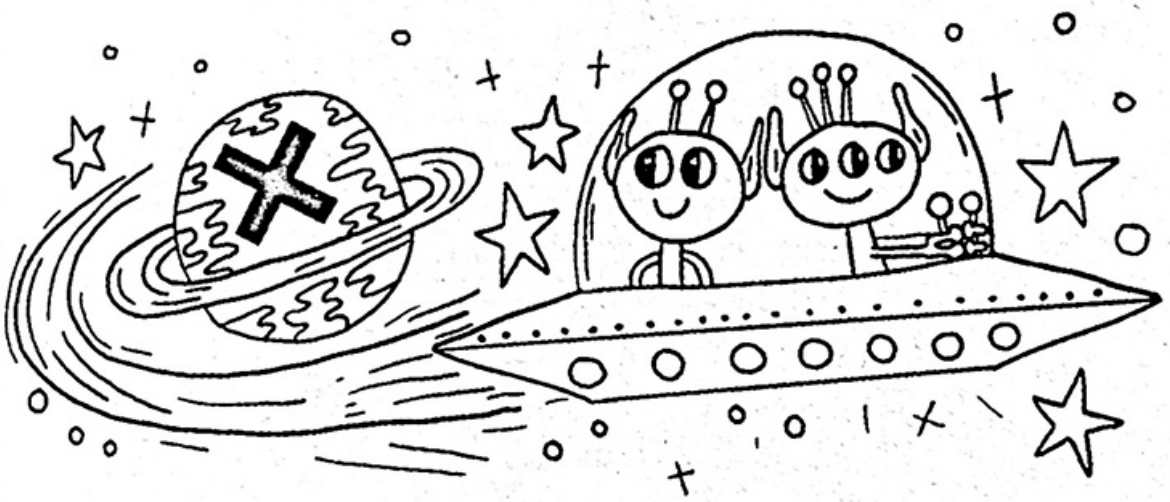


The numbers here DO NOT have a multiplication sign between them because they are not integer multiples. 3 is 1½ times as big as 2

The numbers here DO have a multiplication sign between them because they are integer multiples



TIME .....



			4				5	
1								2
3					5			
				5				6
5								4
			3				1	

MATHS PUZZLE 97

Take a look at these calendars and see if you can answer the questions on the opposite page.

JANUARY

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

FEBRUARY

			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

MARCH

				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

APRIL

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

MAY

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JUNE

					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JULY

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

AUGUST

			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

TIME _____

SEPTEMBER						
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

OCTOBER						
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

NOVEMBER						
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

DECEMBER						
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

a) If it's the 3rd of November today, how many days is it until the 23rd of February next year?

Answer: .....

b) If today was the 19th of August, how many days ago was the 25th of April??

Answer: .....

c) Tomorrow is the 29th February. How many days from now is it until Christmas Day?

Answer: .....

MATHS PUZZLE 98

TIME .....

You are given a calculator that has just been turned on, so it is displaying 0.

Can you make it display a particular number? The only problem is that most of the keys are broken, and only the −, ×, ÷, = and 7 keys are working!

a) First, can you find a way to make 6 appear on the display using just 7 keypresses? You can experiment with a real calculator if you like!

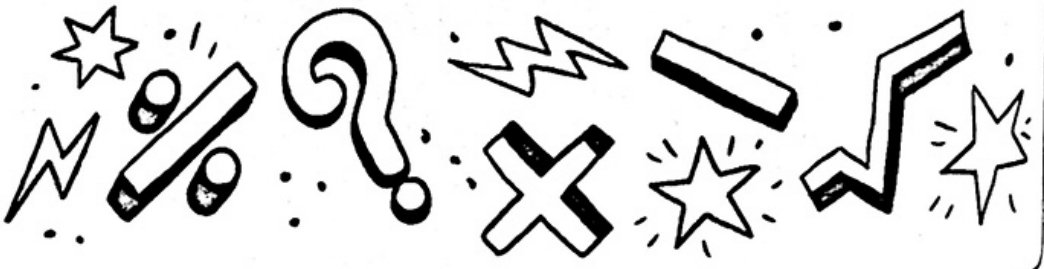
Answer: .....

b) Once you have managed that, turn the calculator off and back on again, to reset it to 0. Now can you make it display 70? Can you do it in just 4 keypresses?

Answer: .....

c) Finally, reset the calculator to 0 again. Now can you make it display 100 in just 8 keypresses?

Answer: .....



TIME .....

MATHS PUZZLE 99

Can you work out which number should come next in each of these mathematical sequences, and why?

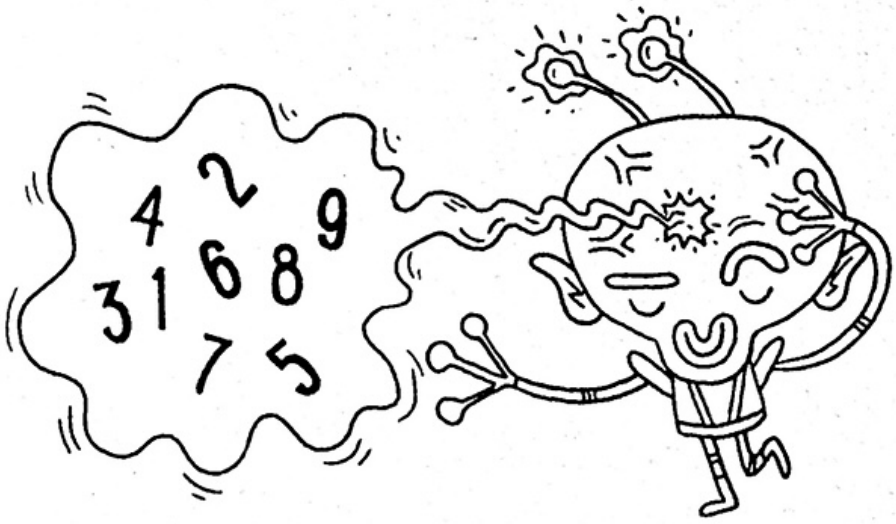
a) 7 17 26 34 41 47 .....

b) 59 53 47 43 41 37 .....

c) 0.15 0.3 0.6 1.2 2.4 4.8 .....

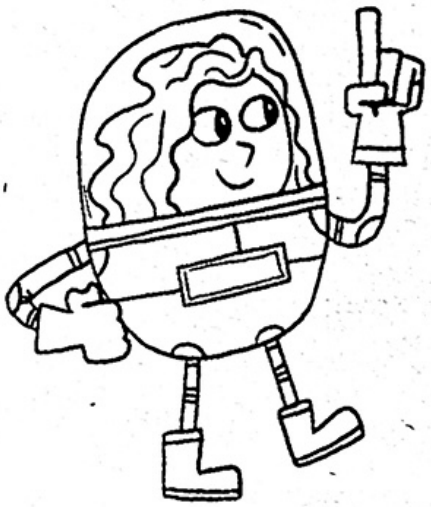
d) 35 24 13 2 -9 -20 .....

e) 3 5 8 13 21 34 .....



MATHS PUZZLE 100

To solve this Calcudoku puzzle, place 1 to 4 once each into every row and column. You must place these numbers so that the values in each bold-lined region of grid squares either add up to or multiply to equal the small number printed in the top left-hand corner of that region, as indicated by either a '+' or 'x' sign. Single-square regions have the value that goes in that region given directly, so you can write these straight in as soon as you begin solving.



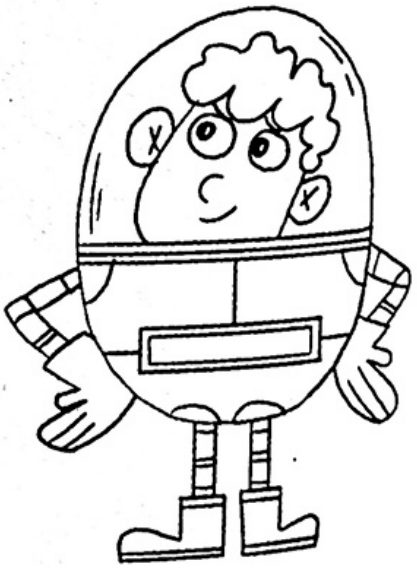
Here's an example to show you how the puzzle works:

12 ×	2	4 ×	
	8 ×	6 +	
			6 +
4 ×		3	

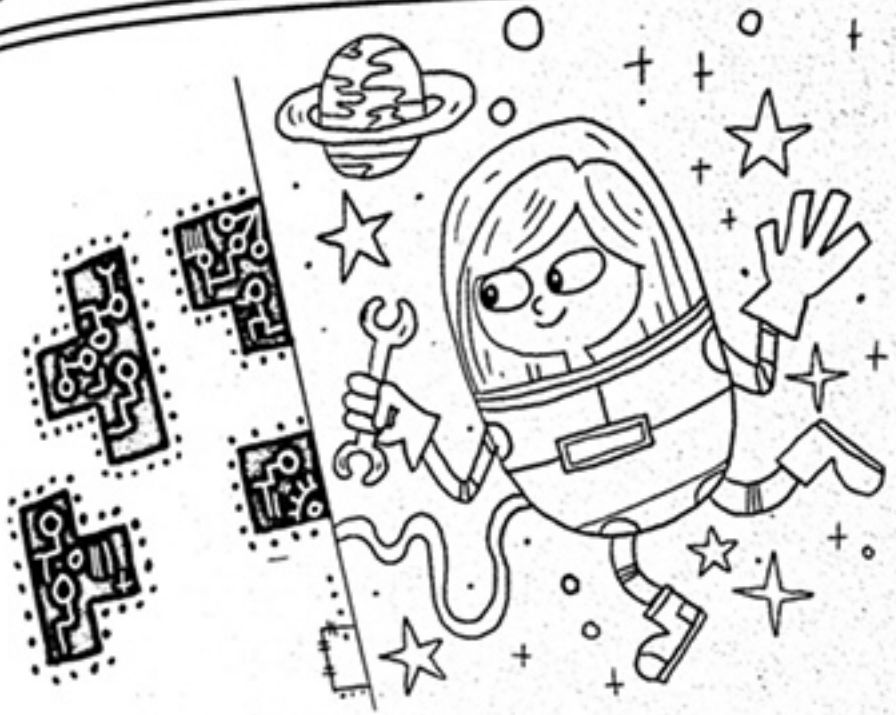
For Instance, 4 x 1 = 4

12 × 3	2 2	4 × 4	1
4	8 × 1	6 + 2	3
2	3	1	6 + 4
4 × 1	4	3 3	2

For Instance, 4 + 2 = 6



TIME _____



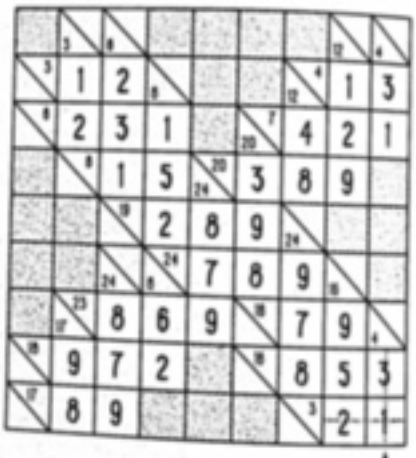
4	8 ×	9 ×	
		16 ×	
18 ×			
			4

MATHS PUZZLE 101

TIME _____

Place a number from 1 to 9 in each white square, so that each 'run' of continuous horizontal or vertical white squares adds up to the number given to the left or the top of that 'run'. You also can't repeat a number within any 'run', so for example you could form a total of 4 with 1+3, but not with 2+2.

Here's a finished example:



In this run, for instance, 1 + 2 = 3 horizontally and 1 + 3 = 4 vertically