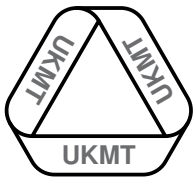


Instructions

- Time allowed: 40 minutes.
- Teams will work in pairs, in separate parts of the room.
- There are 30 questions in total, 15 for Pair A and 15 for Pair B.
- *Two* marks are awarded for every correct answer. Pairs will have two chances to answer each question and there is no penalty for giving a correct answer at the second attempt. A question is marked either correct or incorrect and no partial marks are awarded.



A1

What is the total of all the prime numbers in this grid?

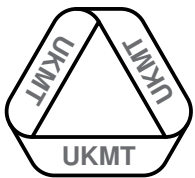
21	22	23
31	32	33
41	42	43

PRIMARY TEAM
MATHS
RESOURCES
2017

RELAY

ANSWER:

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A2

On Valentine's Day Zach decides to play cards using only the hearts from two packs of cards.

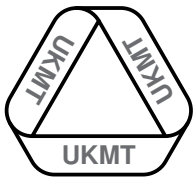
What fraction of the cards that Zach is playing with are sevens?

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2017

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ANSWER:

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A3

PRIMARY TEAM
MATHS
RESOURCES
2017

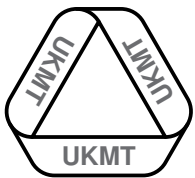
Julia's portion of popping-corn pops at an average rate of 13 pops per second.

How many pops will there be in the 26 seconds it takes the popping to finish?

RELAY

ANSWER:

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A4

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MATHS
RESOURCES
2017

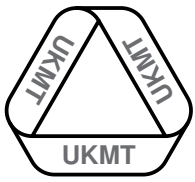
Fred plants daffodils in rows with one in the first row, two in the second row, three in the third row and so on.

How many bulbs will he plant in total in the first eight rows?

RELAY

ANSWER:

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A5

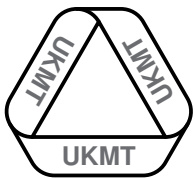
What is the value of $18 + 9 \div 3 - 15$?

PRIMARY TEAM
MATHS
RESOURCES
2017

RELAY

ANSWER:

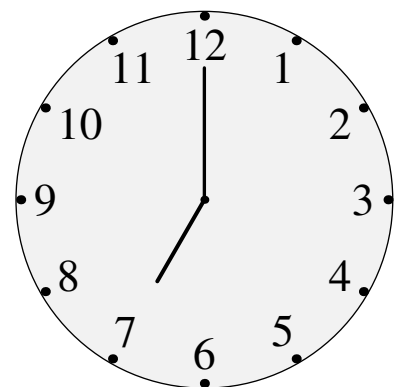
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A6

A television programme starts at 7 pm and lasts 40 minutes.

How many degrees does the minute hand turn through during the programme?

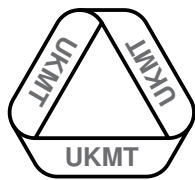


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MATHS
RESOURCES
2017

RELAY

ANSWER:

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A7

PRIMARY TEAM
MATHS
RESOURCES
2017

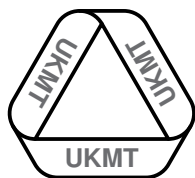
RELAY

What is the value of $1 + 13$ divided by $13 \times 13 - 1$?

Give your answer as a fraction in its lowest terms.

ANSWER:

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A8

PRIMARY TEAM
MATHS
RESOURCES
2017

RELAY

Elizabeth's journey to work is 32 miles each way.

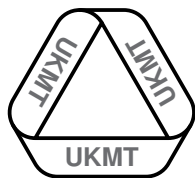
She goes to work six days a week for 34 weeks each year.

Her car averages 48 miles per gallon.

How many gallons does she use travelling to and from work in one year?

ANSWER:

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A9

PRIMARY TEAM
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2017

RELAY

Pamela is decorating cupcakes with “Hundreds and Thousands” (They are small coloured balls of sugar).

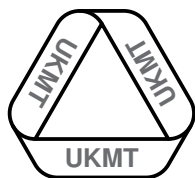
She has to make 36 dozen cakes to sell at market.

Pamela works out that she uses a whole 113g tub and puts 220 Hundreds and Thousands on each cake.

How many Hundreds and Thousands are there in one tub?

ANSWER:

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A10

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2017

RELAY

Jim tiled an area 51 cm by 28 cm, in his kitchen.

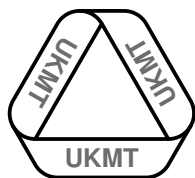
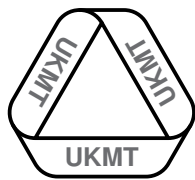
Each of the rectangular tiles he used measures 7 cm by 17 cm.

Jim used whole tiles without cutting any.

How many tiles did Jim use?

ANSWER:

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A11

In this sequence, after the first two terms, each term is calculated by multiplying the previous term by 2 and adding the answer to the term before the previous term.

For example, the third term is $2 \times 2 + 1 = 5$, and the fourth term is $2 \times 5 + 2 = 12$.

1 2 5 12 ?

What is the seventh term in this sequence?

ANSWER:

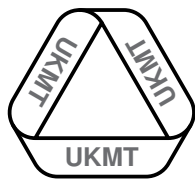
A12

Our school swimming team trains in two pools; the school pool, which is 20 m long and the town pool which is $33\frac{1}{3}$ m long.

Emma is training for the 800 m race.

How many more lengths does she have to swim when she swims 800 m in the school pool than when she swims 800 m in the town pool?

ANSWER:



A13

PRIMARY TEAM
MATHS
RESOURCES
2017

Jack had £20 for his visit to the cinema.

He spent two-fifths of the money on the ticket to get in.

He spent a further £6 on snacks and then three-quarters of what remained on games.

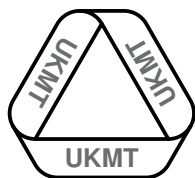
He gave what was left to his little sister, Jill.

How much did Jill receive?

RELAY

ANSWER:

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A14

PRIMARY TEAM
MATHS
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2017

Mr Cox chose a patterned wallpaper to cover just one wall of his bedroom.

The wall is a square measuring 2.6 m by 2.6 m.

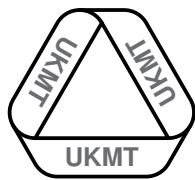
He uses strips of wallpaper that are each 52 cm and 2.6 m long. These strips do not overlap.

How many of these strips will Mr Cox use?

RELAY

ANSWER:

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Mrs Hexason is planning a trip for the whole school, using coaches and minibuses.

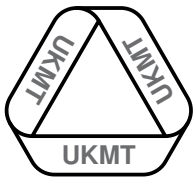
Altogether there are 1148 pupils going on the trip.

There are 32 seats in each coach and 15 seats in each minibus, not counting seats for teachers.

First, each of the coaches is filled. Then the remaining pupils travel in minibuses.

What is the smallest number of minibuses that will be needed?

ANSWER:



B1

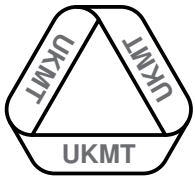
What is the value of $7 - 15 \div 3 + 2$?

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MATHS
RESOURCES
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RELAY

ANSWER:

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B2

Great-granny will be 91 this year. As she celebrates her birthday one of the grandchildren, Victoria, will be thirteen.

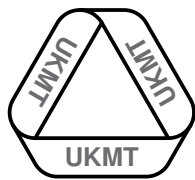
How many times older is Great-granny than Victoria?

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RELAY

ANSWER:

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B3

PRIMARY TEAM
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2017

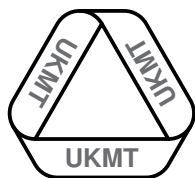
Joseph has made up a game using just the black cards from an ordinary pack of playing cards.

When he shuffled them and turned over the top card, what is the chance that it will be a picture card? Give your answer as a fraction of the black cards.

RELAY

ANSWER:

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B4

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In this sequence, after the first two terms, each term is calculated by multiplying the previous two terms.

For example, the third term is $2 \times 5 = 10$, and the fourth term is $5 \times 10 = 50$.

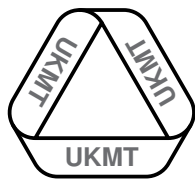
RELAY

2 5 10 50 .. ?

What is the sixth term in this sequence?

ANSWER:

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B5

What is the total of all the prime numbers in this grid?

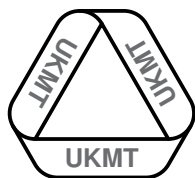
47	48	49
57	58	59
67	68	69

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RESOURCES
2017

RELAY

ANSWER:

© UKMT 2017



B6

After visiting Gauss Castle, Margaret goes to the castle shop.

She picks up six pens, costing 30p each, two erasers at 45p each and a pack of flags marked at £8.00.

When she gets to the till she is told that the pack of flags is on offer at 10% off.

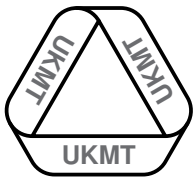
How much change does Margaret get from £10?

PRIMARY TEAM
MATHS
RESOURCES
2017

RELAY

ANSWER:

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B7

What is the value of $(10 + 4 + 2 + 6 + 8) \div (9 + 5 + 7 + 3 + 11 + 1)$?

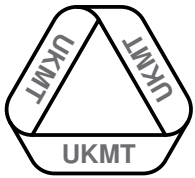
Give your answer as a fraction in its lowest terms

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2017

RELAY

ANSWER:

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B8

A regular nonagon is drawn with lines joining all the vertices to the centre.

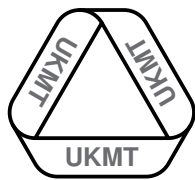
How many degrees are there between two adjacent lines at the centre?

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RELAY

ANSWER:

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B9

PRIMARY TEAM
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In how many different ways can you choose five different numbers from the numbers

1, 2, 3, 4, 5, 6, 7, 8, 9

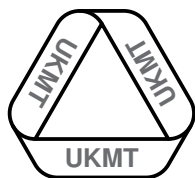
whose total is 22?

[The order in which the numbers are chosen does not matter. For example, the choice of 9, 6, 4, 2, 1 in this order, counts as being the same as the choice of 1, 2, 6, 4, 9, in this order.]

RELAY

ANSWER:

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B10

PRIMARY TEAM
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A book bought on-line will cost me £6.37 plus £4.45 for postage and packing.

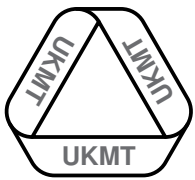
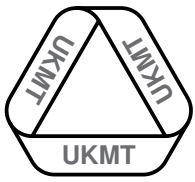
However, if I buy the book from the local bookshop, the same book will cost £10.79.

What is the difference between the cost of buying the book on-line and from the local bookshop?

RELAY

ANSWER:

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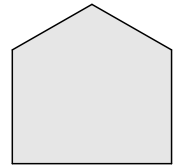
B11

The end wall of a garage is in the shape of a rectangle with a triangle on top.

The rectangle is 7 m long and 5 m high.

The total height of the wall is 7 m.

What is the total area of this end wall in square metres?



ANSWER:

m²

B12

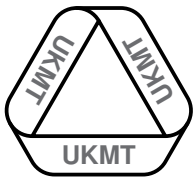
The combined weight of six members of a rowing team is 340 kg.

The heaviest member of the team weighs 80 kg.

What is the mean weight of the other five members of the team?

ANSWER:

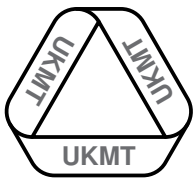
kg



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RELAY

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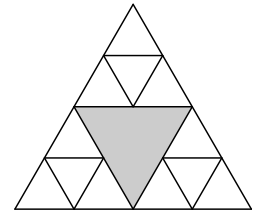
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RELAY

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B13

What fraction of the area of the large equilateral triangle is taken up by the shaded equilateral triangle in the middle?



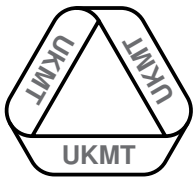
ANSWER:

B14

Karen wishes to make a pattern of flowers in the flowerbed outside the classroom. She plants three bulbs in the first row, six in the second, nine in the third and twelve in the last row. Only two-thirds of the plants flower.

How many bulbs fail?

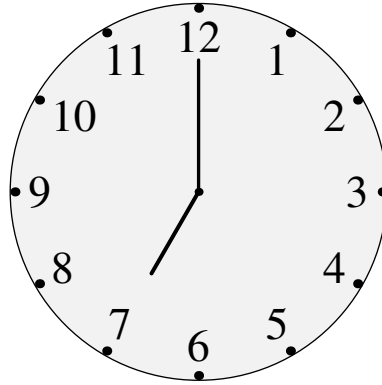
ANSWER:



A radio broadcast starts at 07:00 and finishes at 07:40.

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RELAY



Through how many degrees has the hour hand turned during the programme?

ANSWER: