


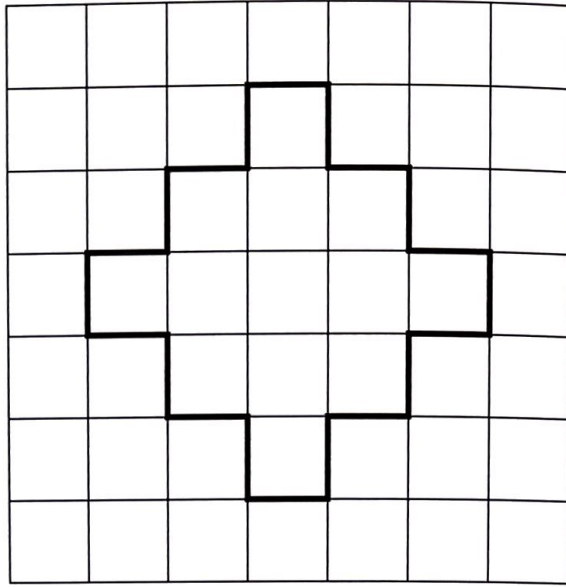
Practice Paper 6

Mathematics

Read the following carefully:

1. **Do not open or turn over the page in this booklet until you are told to do so.**
 2. This is a multiple-choice test in which you have to mark your answer to each question on the separate answer sheet. You should mark only one answer for each question.
 3. Draw a firm line clearly through the rectangle next to your answer like this . If you make a mistake, rub it out as completely as you can and put in your new answer.
 4. Be sure to keep your place on the answer sheet. Mark your answer in the box that has the same number as the question.
 5. You may not be able to finish all the questions, but try to do as many as you can. If you cannot do a question, **do not waste time on it but go on to the next.** If you are not sure of an answer, choose the one you think is best.
 6. You may do any rough working on a separate sheet of paper.
 7. **Work as quickly and as carefully as you can.**
 8. You will have **50 minutes** to do the test.
-

1



Look at this shape drawn on a squares grid.

How many lines of symmetry does the shape have?

A 4

B 1

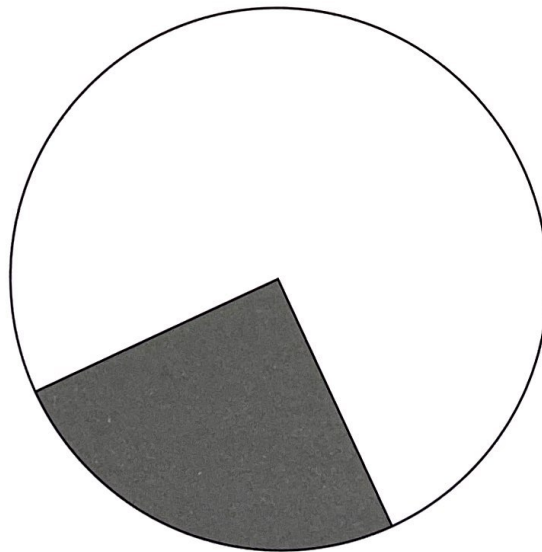
C 8

D 6

E 2

2

What fraction of the circle is shaded?



A $\frac{1}{2}$

B $\frac{1}{3}$

C $\frac{1}{4}$

D $\frac{1}{5}$

E $\frac{1}{6}$

3

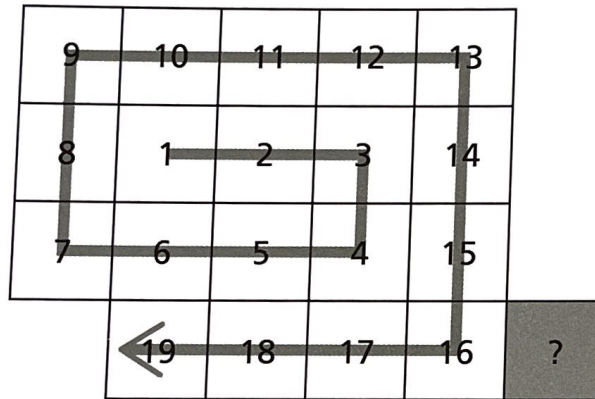
City	Temperature (°C)
Beijing	-6
Cape Town	16
Helsinki	-14
London	4
Mumbai	24

Which two cities have a difference in temperature of 10 degrees?

- A Beijing and Cape Town
- B Beijing and London
- C Cape Town and Helsinki
- D Helsinki and London
- E Helsinki and Mumbai

4

These numbers go round in a spiral.



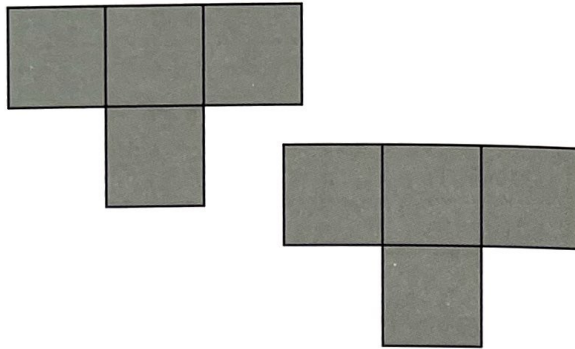
The spiral goes on.

What number will be to the right of 16 in the spiral?

- A 31
- B 32
- C 33
- D 34
- E 35

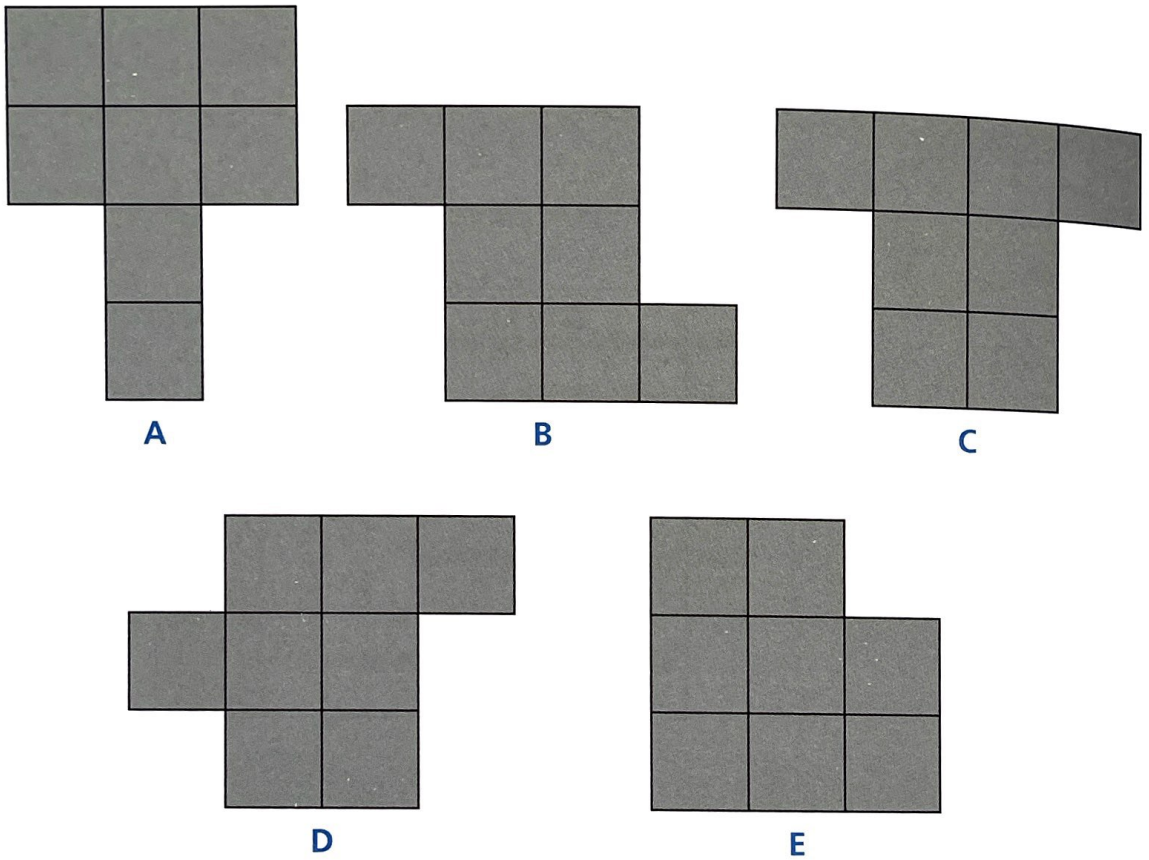
5

Harri has two T-shapes, each made out of four squares.



He fits them together to make another shape.

Which shape can Harri make?



6

What is $13.83 + 4.5$?

A 14.28

B 18.33

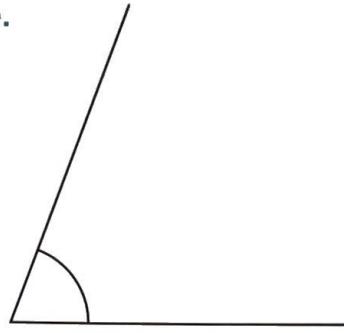
C 18.3

D 18.88

E 17.33

7

Estimate the size of this angle.



A 10°

B 30°

C 50°

D 70°

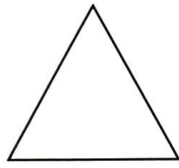
E 90°

8

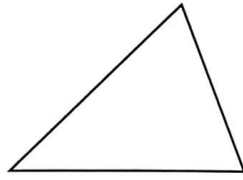
Which of these sets of coins has the greatest value?



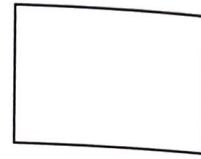
9



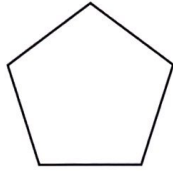
A



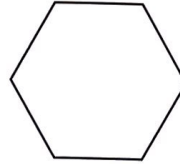
B



C



D



E

Four of these shapes will fit together with shapes of the same kind, without leaving any gaps.

Which one will NOT?

A A

B B

C C

D D

E E

10

A company ordered three cartons of pencils on Monday and seven cartons on Tuesday.

Each carton contained 144 pencils.

How many pencils did the company order altogether?

A 1008

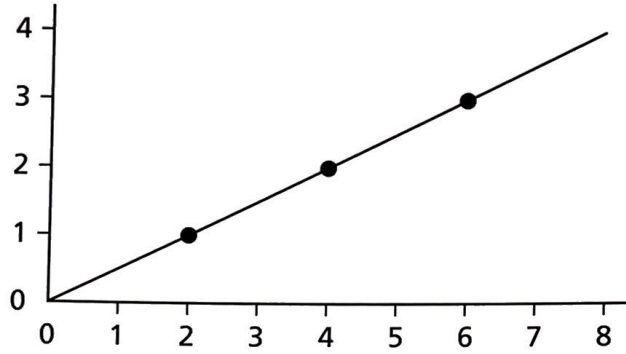
B 3024

C 1152

D 1011

E 1440

11



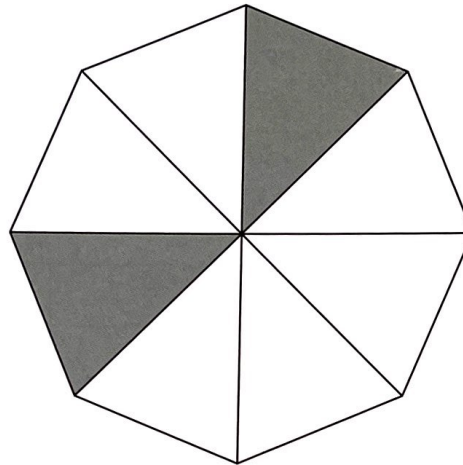
Three points on this line have been plotted at (2 , 1), (4 , 2) and (6 , 3).

Using the same pattern, what are the coordinates of the 10th point?

- A (10 , 5) B (5 , 10) C (20 , 10) D (10 , 20) E (15 , 10)

12

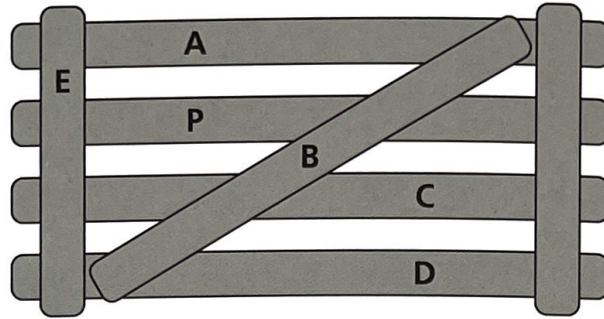
What percentage of this regular octagon is shaded?



- A 10% B 15% C 20% D 25% E 30%

13

This gate is made of seven planks of wood.



Which plank is perpendicular to plank P?

- A A B B C C D D E E

14

Mrs Lee has 212 exercise books.
She packs them into boxes of 30.

How many exercise books does she have left over?

- A 2 B 4 C 6 D 8 E 10

15

Two of the labels are missing from this sorting diagram.

	?	?
Prime		2 3 5 7
Not prime	1 4 9	6 8

Which of these are the missing labels?

- A Odd; Even
B Less than 5; 5 or more
C Prime; Not prime
D Square; Not square
E Whole numbers; Not whole numbers

16

Three pumpkins weigh 13.2 kg, 7.6 kg and 11.4 kg.

What is the total weight of the pumpkins?

- A 32.2 kg B 22.2 kg C 31.2 kg D 21.2 kg E 33.2 kg
-

17

Harpreet wants to measure the area of a photograph in a magazine.

What units should he use?

- A metres
B square metres
C centimetres
D millimetres
E square centimetres
-

18

A poster said:

*It takes
300 kilograms of coal
to run a
100-watt bulb
24 hours a day
for a year.*

*That's equal
to the weight of
three baby elephants!*

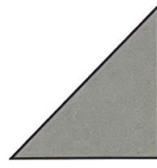
How many 100-watt light bulbs could you run for 12 hours a day for a year with 1200 kilograms of coal?

- A 2 B 4 C 6 D 8 E 10

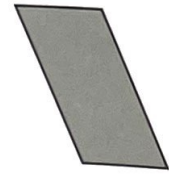
Anita has the following five shapes.



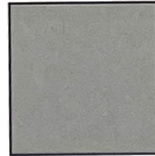
rectangle



right-angled triangle



parallelogram

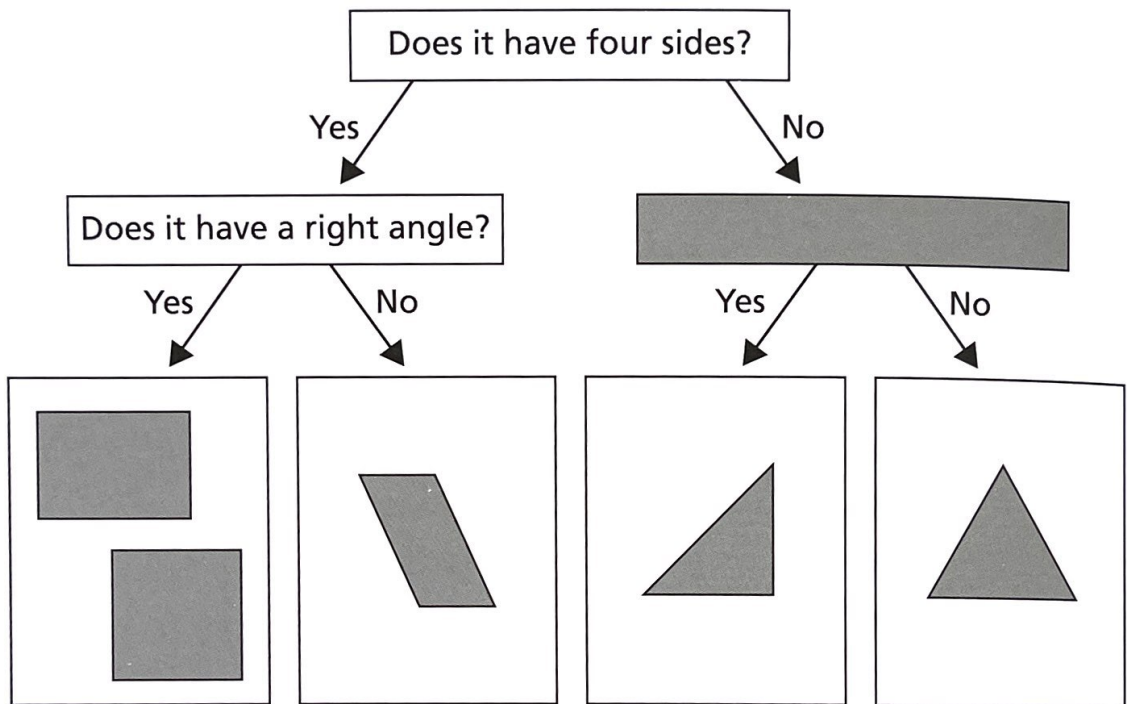


square



equilateral triangle

She uses a sorting diagram to sort her shapes.



Which of these should be in the shaded box?

- A Does it have a right angle?
- B Does it have fewer than four sides?
- C Are all its sides equal?
- D Does it have two right angles?
- E Is it a triangle?

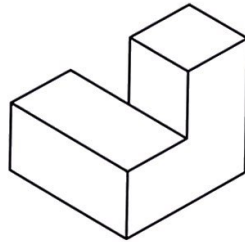
20

Which of these statements is always true?

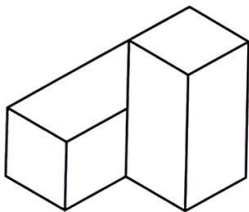
- A If a number ends in a four then it must be a multiple of four.
- B If the sum of all the digits in a number is a multiple of four then the number must be a multiple of four.
- C If the last two digits in a number are a multiple of four then the number must be a multiple of four.
- D If there are at least two fours in a number then it must be a multiple of four.
- E If a number is even then it must be a multiple of four.

21

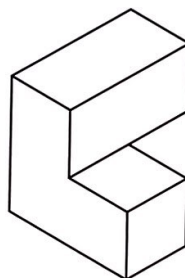
Look at this shape.



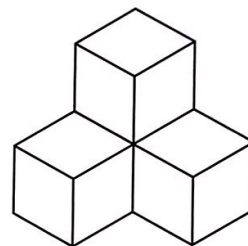
Which one of these is the same shape turned around?



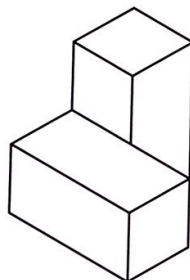
A



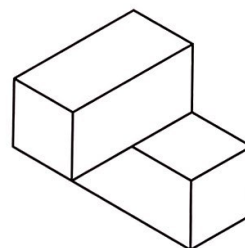
B



C

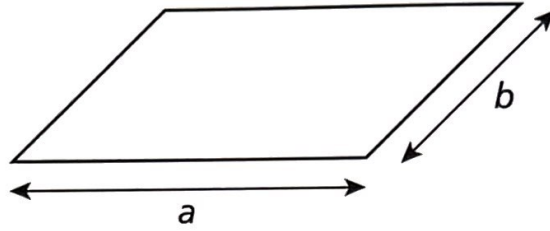


D



E

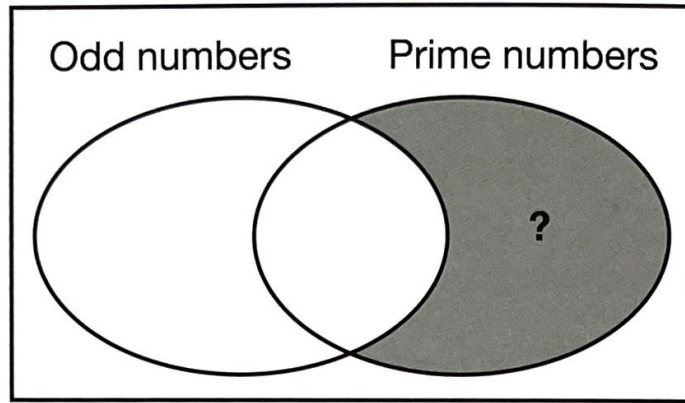
22



What is the formula for the perimeter of this parallelogram?

- A $a + b$ B $2a + 2b$ C $a \times b$ D $a \times 2b$ E $2a \times 2b$

23

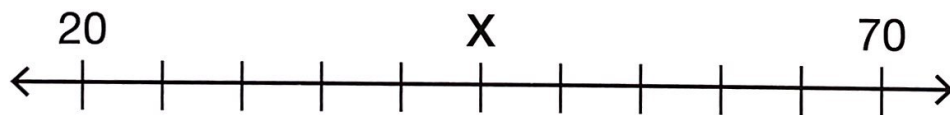


Which of these numbers should go in the shaded area on the Venn diagram?

- A 2 B 3 C 4 D 5 E 6

24

What is the number marked X on this number line?



- A 25 B 35 C 45 D 55 E 65

25

Misa went to the leisure centre.
She used the gym for 50 minutes and then went swimming for 25 minutes.

How long did she exercise altogether?

- A 1 hour and 15 minutes
- B 1.15 hours
- C 7 hours and 5 minutes
- D 7.5 hours
- E 7 hours and 50 minutes

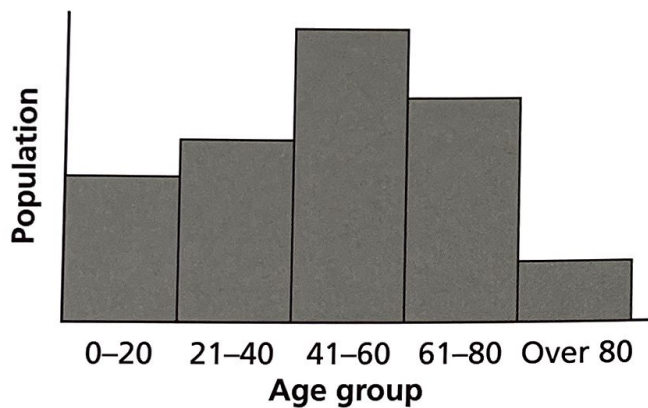
26

Two apples and one orange cost £1. One orange costs 40p.

What is the cost of one apple?

- A 60p
- B 20p
- C 40p
- D 50p
- E 30p

27



The bar chart shows the population of a town by age group.

Which of these age groups have about the same population as the 41-60 age group?

- A 0 to 20
- B 21 to 40
- C 40 and under
- D over 60
- E 61 to 80

28

Gemma's calculator displays the following sum:

$$73 - 2\boxed{} = \boxed{}9$$

The calculator works correctly except that one digit always appears as a blank space.

What is the missing digit?

A 3

B 4

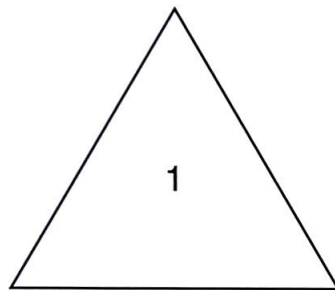
C 5

D 6

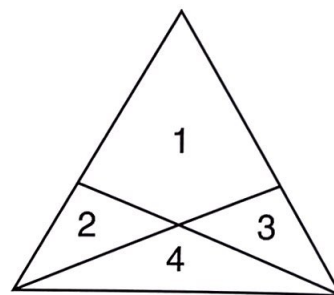
E 7

29

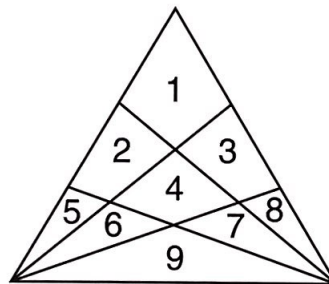
Look at this sequence of triangles.



Triangle 1



Triangle 2



Triangle 3

How many shapes will there be in Triangle 4?

A 36

B 14

C 16

D 25

E 12

30

Catrin started from the number 12 and counted back in steps of 5.

Which of these numbers did she count?

- A 0 B -4 C -2 D -1 E -3

31

A swimming club has 50 members.
The table shows some information about them.

	Girls	Boys	Total
Left-handed	2		6
Right-handed			
Total	22		

How many members of the club are right-handed boys?

- A 24 B 20 C 4 D 22 E 28

32

$$65 \times 320 = 20\,800$$

What is 6.5×3.2 ?

- A 0.28 B 2.08 C 20.8 D 28 E 208

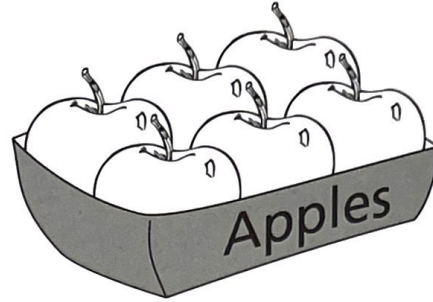
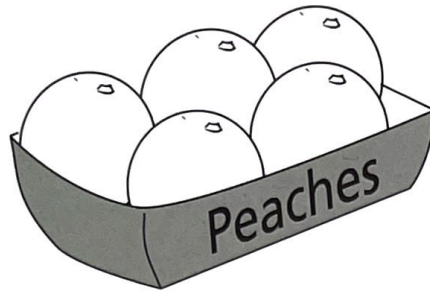
33

On 1st January 2012, Mr Smith started saving £1 every day.

In which year had he saved £1000?

- A 2013 B 2014 C 2015 D 2016 E 2017

34



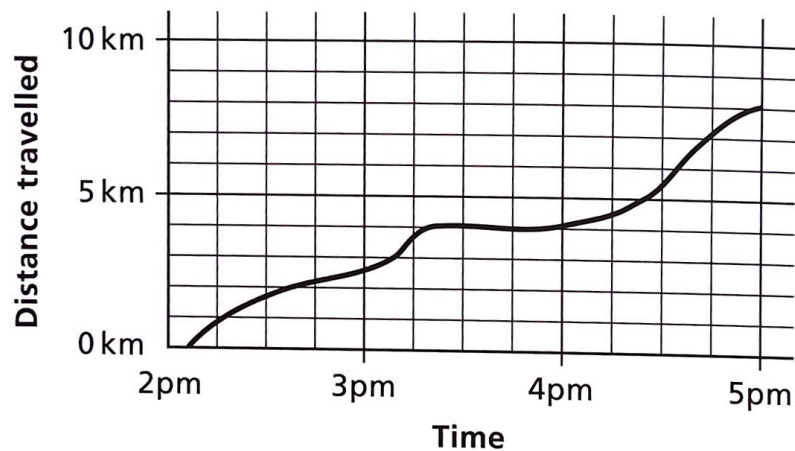
A pack of five peaches costs £2.50.
A pack of six apples costs £1.50.
Lucy needs 30 peaches and 30 apples.

How much does she pay?

- A £24.00 B £21.50 C £22.00 D £20.00 E £22.50

35

Steve and Ramesh walked from Sildown to Northmere.
They stopped in Northmere for a time and then walked back to Sildown.
The graph shows their journey.



What is the distance from Sildown to Northmere?

- A 2 km B 4 km C 6 km D 8 km E 10 km

36

If 30th April is a Wednesday, what day of the week will 30th May be?

- A Friday
- B Saturday
- C Thursday
- D Sunday
- E Monday

37

The table below shows the maximum and minimum temperatures for one week in January.

	Maximum	Minimum
Monday	7°C	0°C
Tuesday	8°C	-3°C
Wednesday	10°C	1°C
Thursday	8°C	-4°C
Friday	6°C	-2°C

Which day shows the greatest difference between minimum and maximum temperatures?

- A Monday
- B Tuesday
- C Wednesday
- D Thursday
- E Friday

38

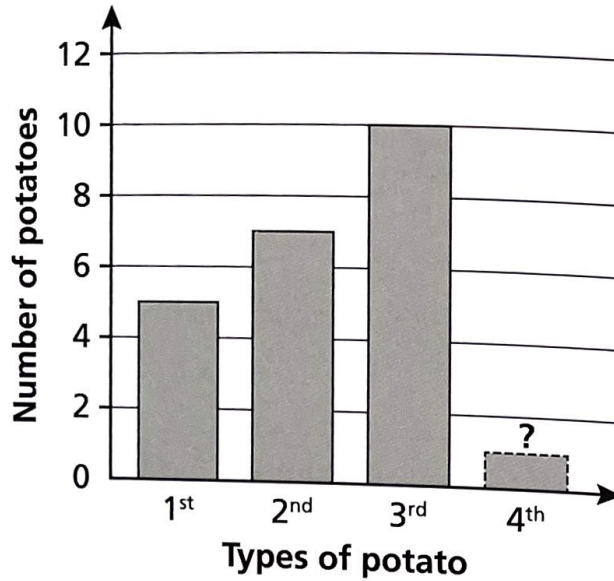
One 5p coin weighs $3\frac{1}{4}$ grams.
Toby has 40 pence worth of 5p coins.

How many grams do they weigh?

- A 13
- B $16\frac{1}{4}$
- C 26
- D 52
- E 130

39

Shazia counted out one kilogram of each of four different types of potato. She counted out 32 potatoes in total. The bar chart shows her results for three of the types of potato.



How many potatoes of the 4th type did Shazia count out?

- A 8
- B 9
- C 10
- D 11
- E 12

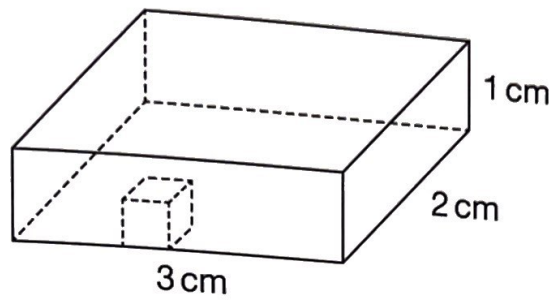
40

$$32 \div 2 < x^2$$

Which of these numbers is the smallest number x could be?

- A 1
- B 2
- C 3
- D 4
- E 5

41



What is the largest number of cubes of sides 0.5 cm that will fit into the cuboid above?

- A 48 B 12 C 24 D 6 E 96

42

Which of these pairs of numbers are equally distant from 3?

- A 3.01 and 2.91
B 3.01 and 2.99
C 3.11 and 2.91
D 3.11 and 2.99
E 3.19 and 2.91

43

The original price of a backpack was £81.
During a sale, the price of the backpack was reduced by £4.50 each week.

After how many weeks would the price of the backpack be $\frac{5}{9}$ of the original price?

- A 9 B 11 C 16 D 8 E 10

44

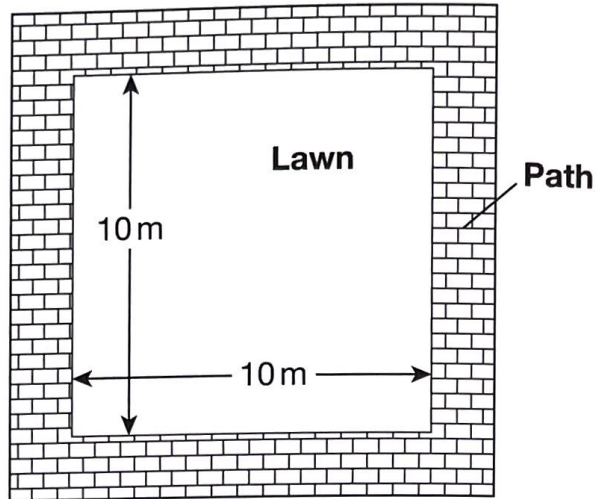
In a town, 15% of total household waste is recycled.
30 000 tonnes are recycled.

How many tonnes are NOT recycled?

- A 45 000 B 30 000 C 200 000 D 55 000 E 170 000

Please go on to the next page >>>

45



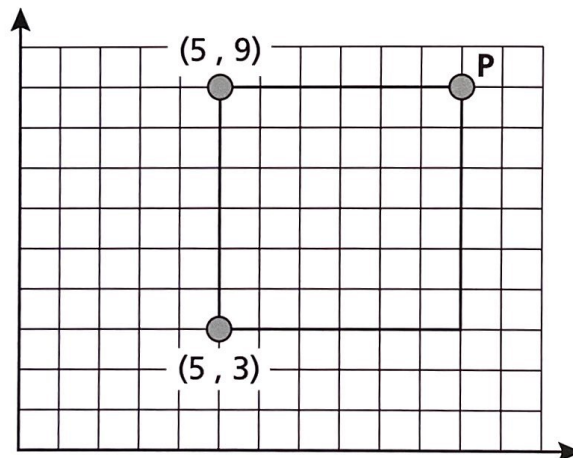
The figure shows a 10 metre by 10 metre lawn surrounded by a path 2 metres wide.

What is the outer perimeter of the path?

- A** 40 m **B** 42 m **C** 48 m **D** 52 m **E** 56 m

46

The diagram shows a square drawn on a square coordinate grid.



What are the coordinates of point P?

- A** (9, 11) **B** (10, 12) **C** (10, 9) **D** (11, 9) **E** (11, 15)

47

Adam sleeps for nine hours each night, five nights a week, and 11 hours for two nights a week.

Which is closest to the percentage of the whole week that Adam spends sleeping?

- A 25% B 30% C 33% D 40% E 50%

48

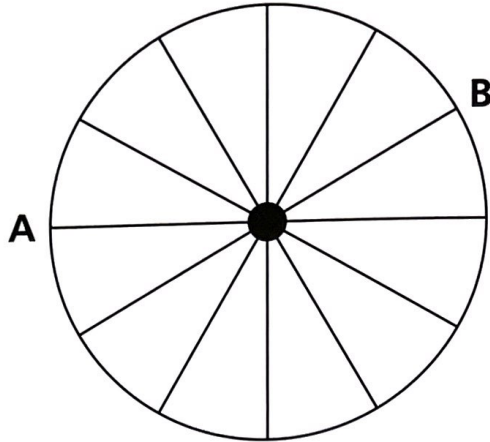
Look at these results for a 150-metre race.

Who came first in the race?

Name	Time
Adi	32.7 seconds
Bethan	32.75 seconds
Carlos	32.57 seconds
Danny	32.71 seconds
Ella	32.07 seconds

- A Adi B Bethan C Carlos D Danny E Ella

49



This circle is divided into 12 equal sectors.

What is the smaller angle between point A and point B?

- A** 110° **B** 150° **C** 120° **D** 210° **E** 30°

50

A shirt costs £12.30.
The price is reduced by $\frac{1}{3}$.

Which one of these is the lowest amount you need to buy it?

- A** £4 **B** £5 **C** £7 **D** £8 **E** £9