YEAR
9
2013

NUMERACY
NON-CALCULATOR

Use 2B or HB pencil **only**

YEAR 9 NUMERACY (NON-CALCULATOR)

1 How much is three-quarters of $600?

$150 $360 $400 $450 $800
 ○   ○   ○   ○   ○

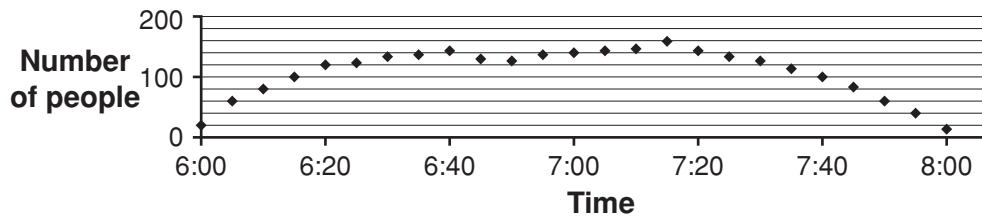**2** This graph shows the number of people in a school hall at 5-minute intervals over 2 hours.

At which of these times was the greatest number of people in the hall?

6:40   7:00   7:15   7:20
 ○   ○   ○   ○

3 This fence has five sections of equal length.

Three of the sections have been painted black.

What percentage of the whole fence has been painted **black**?

3%   18%   30%   40%   60%
 ○   ○   ○   ○   ○

4 At a ski resort the morning temperature was –11°C.

In the afternoon the temperature was 5°C.

What was the change in temperature from the morning to the afternoon?

decrease of 16°C   decrease of 6°C   increase of 6°C   increase of 16°C
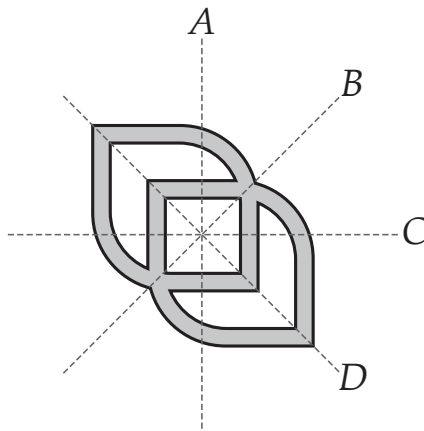   ○   ○   ○   ○

5 $6 \times (4 + 2)$ [?] $4 \times 5 + 6$

Which symbol (<, =, >) should replace [?] to make the number sentence correct?

<	=	>
○	○	○

6 Which are the lines of symmetry of this shape?

A and C	B and D	B and C	A and D
○	○	○	○

7 What is the probability of an event that is certain to happen?

0.0	0.5	1.0	1.5
○	○	○	○

8 2015 is called a tri-square year because

$2^2 + 0^2 + 1^2 = 5$

The **next** tri-square year after 2015 will be

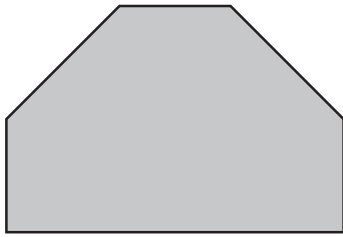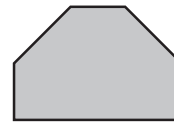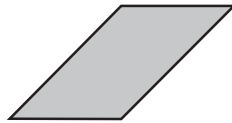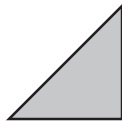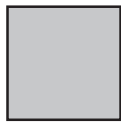| 2019	2028	2109	2116
○	○	○	○

9 This paper shape was cut into several identical pieces with no paper left over.
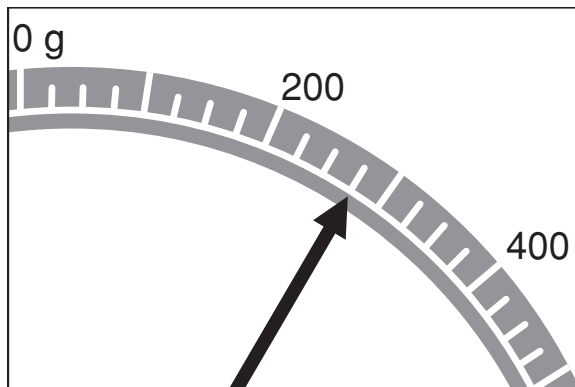
Which of these could be the shape of the pieces?

○   ○   ○   ○

10 Finn put some flour on his kitchen scales.

The picture shows part of the dial.

0 g

200

400

How many grams of flour did Finn put on the scales?

230   260   275   280   325
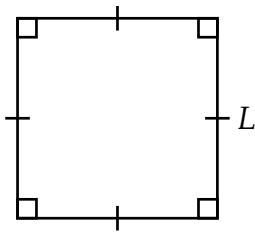
○   ○   ○   ○   ○

11 $3^4 - 3^2 =$?

6   9   72   75

○   ○   ○   ○

12

This square has side length L.

Which of these expressions could not be used for the perimeter of the square?

$L \times 4$ $\quad\quad$ $L \times L$ $\quad\quad$ $2 \times (L + L)$ $\quad\quad$ $L + L + L + L$

◯ $\quad\quad\quad$ ◯ $\quad\quad\quad\quad$ ◯ $\quad\quad\quad\quad$ ◯

13

Which of the following triangle types is **impossible** to draw?

◯ $\quad$ a scalene, right-angled triangle

◯ $\quad$ an isosceles, acute-angled triangle

◯ $\quad$ an isosceles, obtuse-angled triangle

◯ $\quad$ an equilateral, right-angled triangle

14

The first track on a CD runs for 2 minutes 45 seconds.

The second track runs for 4 minutes 25 seconds.

What is the difference in running time between the two tracks?

◯ $\quad$ 1 minute 40 seconds

◯ $\quad$ 2 minutes 20 seconds

◯ $\quad$ 2 minutes 40 seconds

◯ $\quad$ 7 minutes 10 seconds

15

Max has 3.98 litres of lemonade in bottles.

The bottles come in three sizes: 1.5 litres, 650 millilitres, 330 millilitres. All the bottles are full.
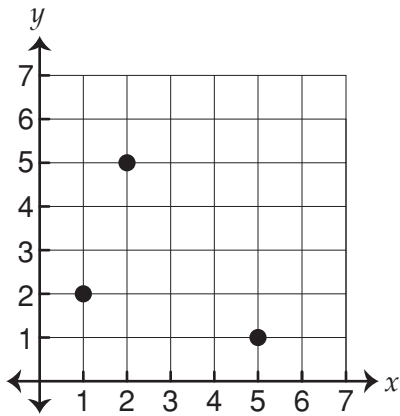
How many bottles does Max have?

4 $\quad\quad\quad\quad$ 6 $\quad\quad\quad\quad$ 7 $\quad\quad\quad\quad$ 10 $\quad\quad\quad\quad$ 12

◯ $\quad\quad\quad$ ◯ $\quad\quad\quad$ ◯ $\quad\quad\quad$ ◯ $\quad\quad\quad$ ◯

16 This graph shows three corners of a parallelogram.

Which of these points is the fourth corner?

(4, 6)	(5, 5)	(6, 4)	(6, 5)
⬭	⬭	⬭	⬭

17 In the past month, five houses were sold in Liz's neighbourhood.

The selling price for each house is listed below.

$225 000, $225 000, $355 000, $275 000, $380 000

What was the **median** selling price for these five houses?

$225 000	$275 000	$292 000	$355 000
⬭	⬭	⬭	⬭

18 Which of these is equivalent to $-(x + 2)$?

$-x - 2$	$x - 2$	$-x + 2$	$x + 2$
⬭	⬭	⬭	⬭

19 $10x > x^2$

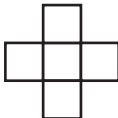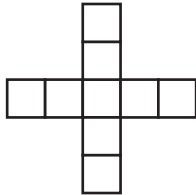What is the largest whole number x can be?

20

Meg has an electronic photo display.
Each photo remains on the screen for 9 seconds.
Meg has 100 photos on her memory card.

How many **minutes** will it take to complete the display of all photos?

| | minutes

21

The table below shows a pattern of shapes.

Shape number *(N)*	1	2	3
Number of squares *(S)*	1	5	9

The equation which is used to show the relationship between *S* and *N* is

$S = N + 4$ $S = 4N$ $S = 4N + 4$ $S = 4N - 3$

◯ ◯ ◯ ◯

22

The top and bottom faces of this object are both regular 7-sided polygons.

The other faces are isosceles triangles.
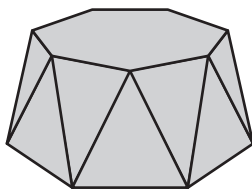
How many **edges** does the object have?

| |

23

Three friends share a job.

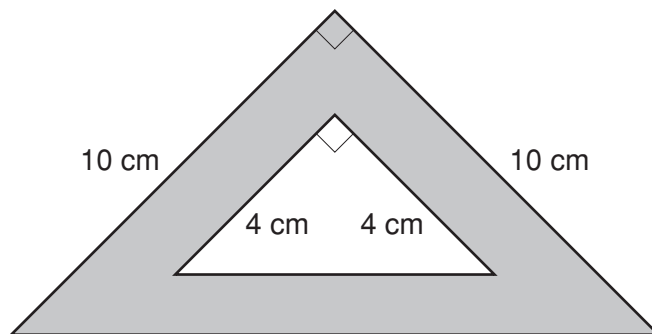They share their total pay based on the number of days each worked.

	Days worked
Jake	1
Ryan	4
Matt	2

This week their total pay is $420.

What is Matt's share?

$ [   ]

24
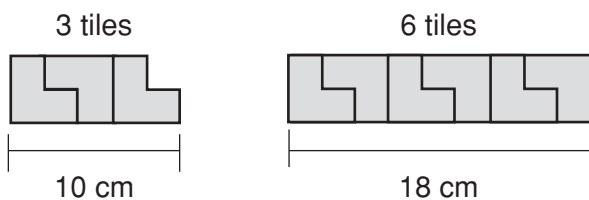

What is the area of the grey part of the shape?

[   ] square centimetres

25

Ruby joins some tiles to make lines of different lengths.
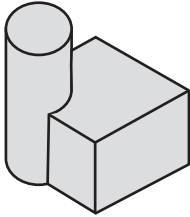
3 tiles

6 tiles

10 cm

18 cm

She follows the same pattern to make a line that is 60 cm long.
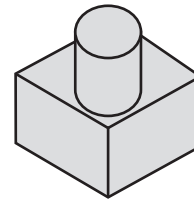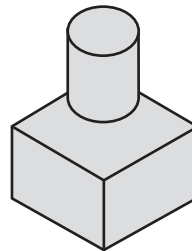
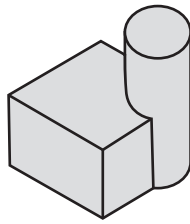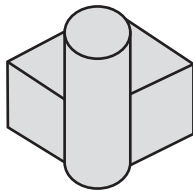How many tiles are in this line?

[   ]

26 Emily drew this picture of a building. It shows a view of the building from the north.
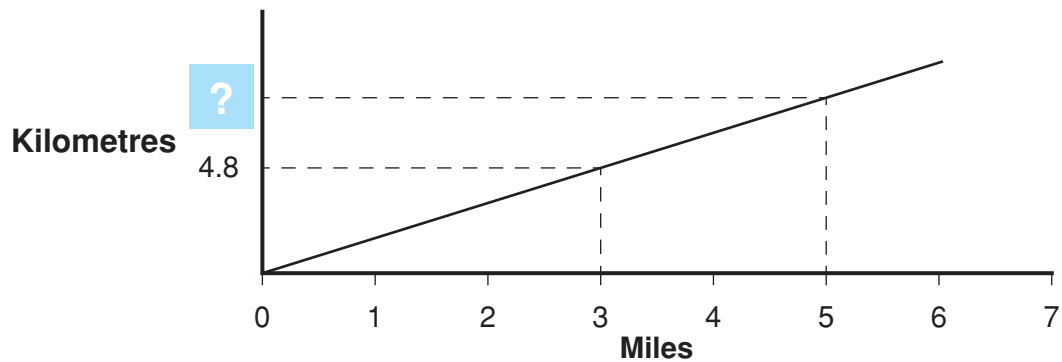
Which of these is a view of the building from the east?

○   ○   ○   ○

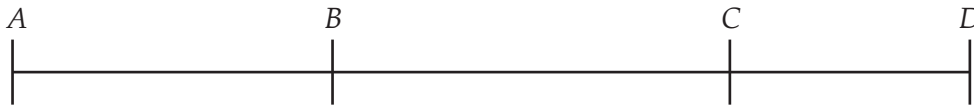**27** This graph can be used to approximately convert miles to kilometres.

Using the graph, a distance of 5 miles is closest to

○   6.3 kilometres.

○   6.8 kilometres.

○   7.2 kilometres.

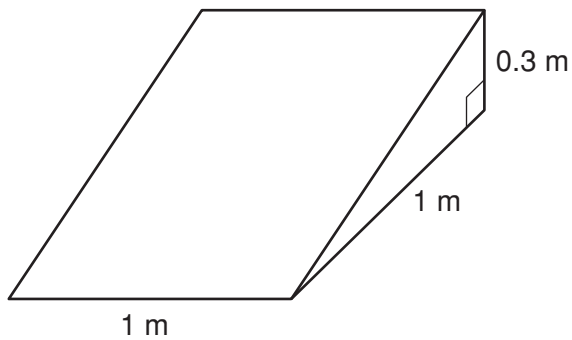○   8.0 kilometres.

28

A   B   C   D

The distance from A to B is one-third of the distance from A to D.
The distance from C to D is one-quarter of the distance from A to D.
The distance from B to C is 150 millimetres.

What is the distance from A to D?

millimetres

29

This skateboard ramp is a triangular prism.

It is filled with sand.

0.3 m

1 m

1 m

What is the volume of the sand?

    0.15 m^3 0.3 m^3 1.5 m^3 3 m^3

   ⬭   ⬭   ⬭   ⬭

30

A population of kangaroos has a death rate of 1 kangaroo every 2 days.
The same population of kangaroos has a birth rate of 1 kangaroo every 3 days.
Overall, the population is decreasing at the rate of 1 kangaroo every x days.

What is the value of x?

31

A new fence is to be built around the perimeter of this paddock.
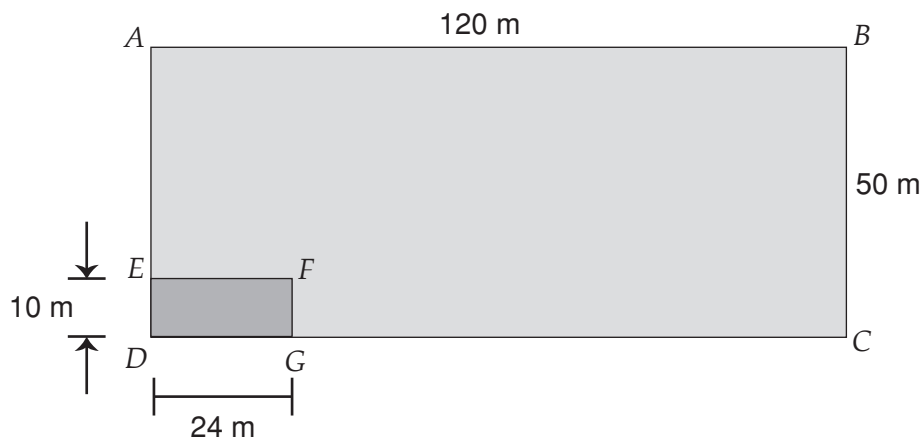
The fence is to have 4 strands of wire as shown.

500 metres

500 metres

paddock

600 metres

4-strand
wire fence

900 metres
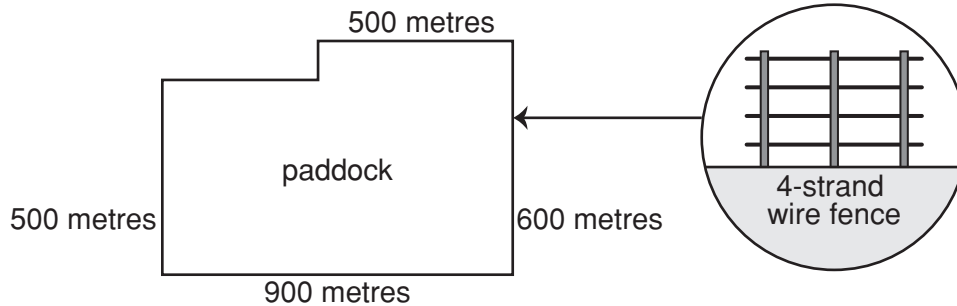
How many **kilometres** of wire are needed?

kilometres

32

A teacher marked out two rectangles on a sports field as shown.

A   120 m   *B*

50 m

E   *F*

10 m

D   *G*

C

24 m

Rectangles *ABCD* and *EFGD* are similar.
The distance from *D* to *F* is 26 metres.

What is the distance from *F* to *B*?

metres

STOP – END OF TEST