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0580/12

May/June 2019

1 hour

Additional Materials: Electronic calculator Geometrical instruments
Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

DO **NOT** WRITE IN ANY BARCODES.

For π , use either your calculator value or 3.142.

The total of the marks for this paper is 56.

This document consists of **11** printed pages and **1** blank page.

- 1 Write 30682 in words.

..... [1]

- 2 Change 4365 metres into centimetres.

..... cm [1]

- 3 Insert one pair of brackets to make this statement correct.

$$4 \times 6 - 2 + 1 = 17$$

[1]

- 4 The probability that Tommy has his calculator for his mathematics lesson is 0.4 .
There are 120 mathematics lessons in one year.

Work out an estimate of the number of mathematics lessons in one year that Tommy has his calculator.

..... [1]

- 5 (a) Subtract 123 from 1 million.

..... [1]

- (b) Subtract 9 from 2.

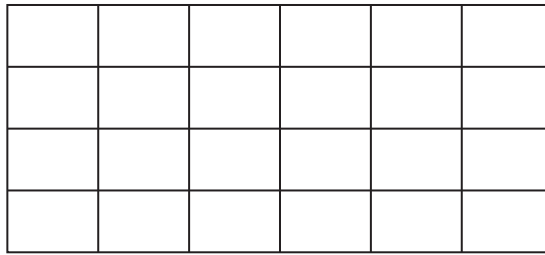
..... [1]

- 6 Complete each statement.

(a) A quadrilateral with only one pair of parallel sides is called a [1]

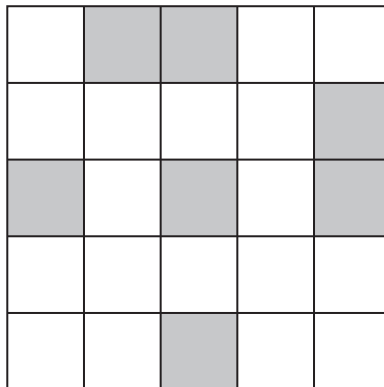
(b) An angle greater than 90° but less than 180° is called [1]

- 7 (a) Shade five-eighths of this rectangle.



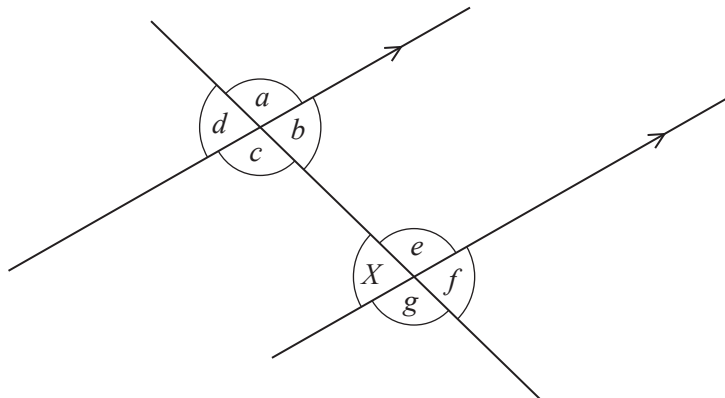
[1]

- (b) Shade two more squares so that this grid has rotational symmetry of order 4.



[1]

8



The diagram shows two parallel lines and a straight line crossing them.

Write down, using letters from a to g ,

- (a) the angle that is alternate to angle X ,

..... [1]

- (b) the angle that is corresponding to angle X .

..... [1]

- 9 50 students each choose their favourite colour from a list of six colours.
The results for the colours Red, Orange, Yellow, Green and Blue are shown in the tally chart.

Complete the tally chart.

Favourite colour	Tally
Red	I
Orange	
Yellow	
Green	
Blue	
Purple	

[2]

- 10 (a) Write 0.047 883 correct to 2 significant figures.

..... [1]

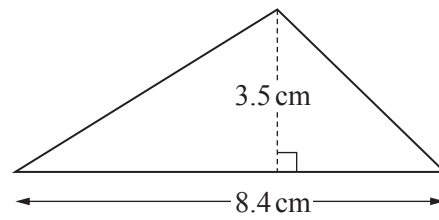
- (b) Write 0.005 27 in standard form.

..... [1]

- 11 Find the highest common factor (HCF) of 90 and 48.

..... [2]

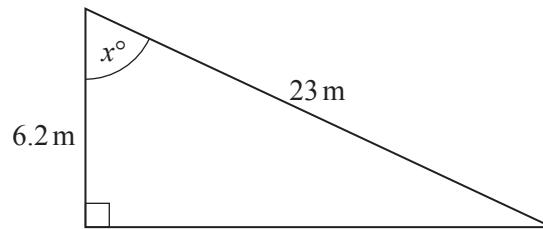
12

NOT TO
SCALE

Calculate the area of this triangle.

..... cm^2 [2]

13

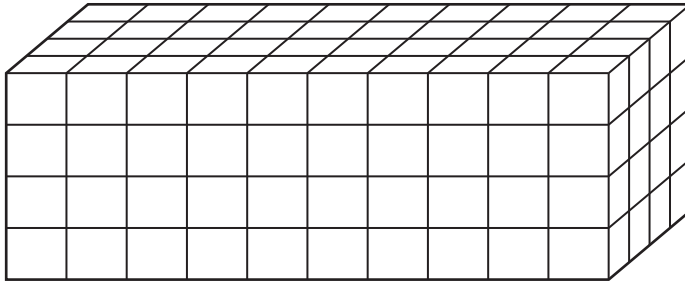
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The diagram shows a right-angled triangle.

Calculate the value of x .

$x =$ [2]

- 14 (a) The diagram shows a solid cuboid made of identical cubes.

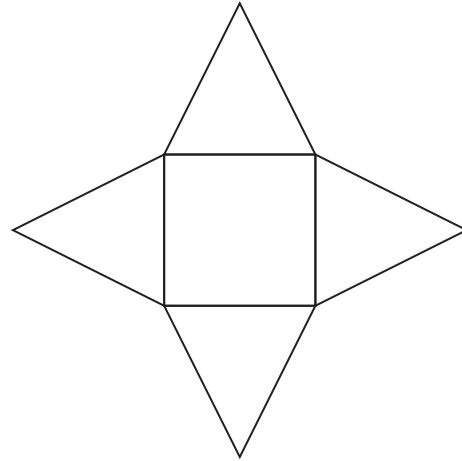
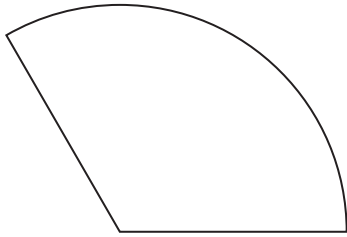


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Work out the number of cubes in the cuboid.

..... [1]

- (b) The diagram shows the nets of two solids.
Write down, under each net, the mathematical name for the solid.



.....

.....

[2]

- 15** A box contains 22 coloured pencils.
6 pencils are pink, 9 pencils are blue and 7 pencils are yellow.

(a) Write down the ratio pink pencils : not pink pencils.
Give your answer in its simplest form.

..... : [2]

(b) A pencil is taken at random from the box.

Write down the probability that this pencil is green.

..... [1]

- 16 (a)** Expand.

$$x^2(x-7)$$

..... [2]

(b) Factorise.

$$y^2 + y$$

..... [1]

- 17 (a)** Show that there is not a square number between 50 and 60.

[2]

(b) Write down a prime number between 50 and 60.

..... [1]

18 A machine always takes 5 minutes to paint an 80 metre white line on a road.

(a) Work out the number of metres painted in 45 minutes.

..... m [1]

(b) Work out the number of minutes taken to paint a 2.8 km line.

..... min [2]

19 Simplify.

(a) $5m^2 \times 2m^3$

..... [2]

(b) $(x^8)^3$

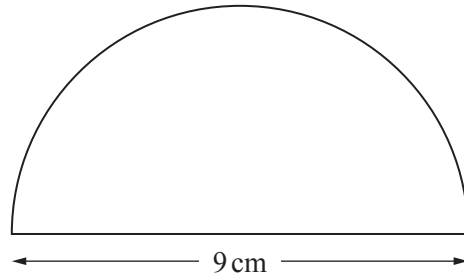
..... [1]

20 **Without using a calculator**, work out $2\frac{1}{4} \div \frac{3}{7}$.

You must show all your working and give your answer as a mixed number in its simplest form.

..... [3]

21

NOT TO
SCALE

The diagram shows a semicircle with diameter 9 cm.

Calculate the total perimeter of this semicircle.

..... cm [3]

22 Gerry and Alain run around a running track.

To run around the track once

- Gerry always takes 90 seconds
- Alain always takes 105 seconds.

They start together at the same point.

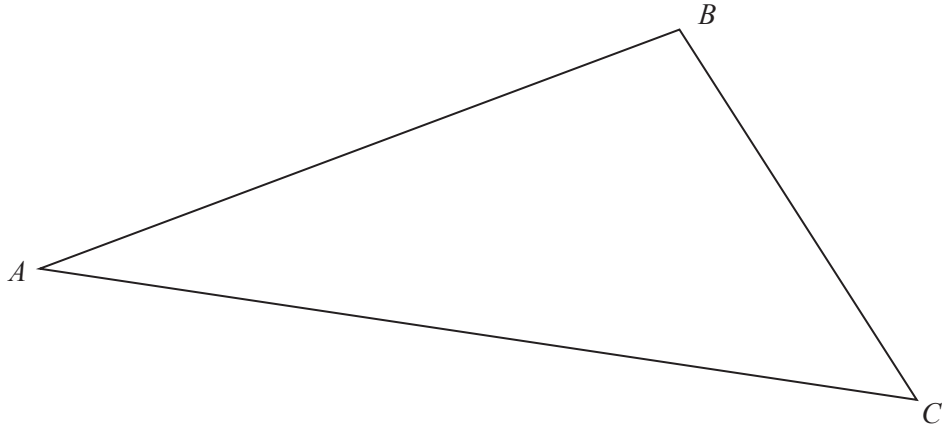
After how many minutes are they next together at that point?

..... min [3]

23 Rearrange this formula to make x the subject.

$$5x^2 - 3y = 4y + 8$$

$$x = \dots\dots\dots [3]$$



- (a) (i) Using a straight edge and compasses only, construct the perpendicular bisector of AB .
Show all your construction arcs. [2]
- (ii) Using a ruler and compasses only, construct the locus of points inside the triangle that are 4 cm from C . [1]
- (b) Shade the region inside the triangle that is
- more than 4 cm from C
 - and
 - closer to B than to A .
- [1]

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