

|  |
|--|
|  |
|--|

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|--|--|--|--|--|

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

0444/13

October/November 2016

**1 hour**

Additional Materials: Geometrical instruments

## READ THESE INSTRUCTIONS FIRST

DO **NOT** WRITE IN ANY BARCODES.

If work is needed for any question it must be shown in the space provided.

The total of the points for this paper is 56.

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

**Formula List**

Area,  $A$ , of triangle, base  $b$ , height  $h$ .

$$A = \frac{1}{2}bh$$

Area,  $A$ , of circle, radius  $r$ .

$$A = \pi r^2$$

Circumference,  $C$ , of circle, radius  $r$ .

$$C = 2\pi r$$

Lateral surface area,  $A$ , of cylinder of radius  $r$ , height  $h$ .

$$A = 2\pi rh$$

Surface area,  $A$ , of sphere of radius  $r$ .

$$A = 4\pi r^2$$

Volume,  $V$ , of prism, cross-sectional area  $A$ , length  $l$ .

$$V = Al$$

Volume,  $V$ , of cylinder of radius  $r$ , height  $h$ .

$$V = \pi r^2 h$$

Volume,  $V$ , of sphere of radius  $r$ .

$$V = \frac{4}{3}\pi r^3$$

- 1 Write in figures the number five thousand and thirty four.

.....[1]

- 2 Work out.  
 $-2 + 7 - 8$

.....[1]

- 3  $V = 4p^2$   
 Find  $V$  when  $p = 3$ .

$V =$  .....[1]

- 4 Simplify.  
 $n^2 \times n^5$

.....[1]

- 5 Write in scientific notation.

(a) 2 470 000

.....[1]

(b) 0.0079

.....[1]

- 6 Write these in order of size, smallest first.

$$\left(\frac{1}{2}\right)^2$$

$$0.22$$

$$\sqrt{0.09}$$

$$0.4^2$$

.....[2]  
*smallest*

- 7 The table shows the vehicles available for hire from Speedy Motors.

| Vehicle       | Color          | Engine size (liter) | Cost per day (\$) | Minimum number of days hire |
|---------------|----------------|---------------------|-------------------|-----------------------------|
| Saloon        | white          | 2                   | 30                | 1                           |
| Station wagon | black          | 2.5                 | 35                | 1                           |
| Hatch         | white or black | 1.8                 | 40                | 2                           |
| MPV           | black          | 2                   | 45                | 1                           |
| Van           | black          | 2.5                 | 50                | 2                           |

Walt hires a black vehicle, with an engine size greater than 2 liters, for 1 day.

- (a) Which vehicle does Walt hire?

..... [1]

- (b) How much does this vehicle cost Walt for the day?

\$ ..... [1]

- 8 Work out  $\frac{3}{5} + \frac{1}{6}$ .

Give your answer as a fraction in its simplest form.

..... [2]

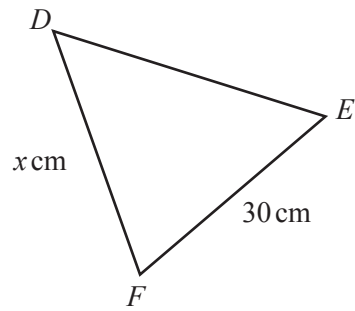
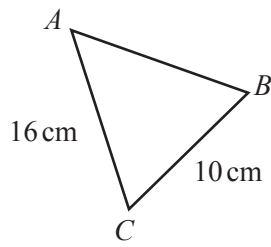
- 9 (a) Change 0.183 meters to centimeters.

..... cm [1]

- (b) Change 12 800 square millimeters to square centimeters.

..... cm<sup>2</sup> [1]

- 10 Triangles  $ABC$  and  $DEF$  are similar.



NOT TO  
SCALE

Find the value of  $x$ .

$x = \dots\dots\dots$  [2]

- 11 Here are the heights, in centimeters, of 8 people.

153      175      168      158      161      172      164      172

- (a) Write down the mode.

$\dots\dots\dots$  cm [1]

- (b) Find the median.

$\dots\dots\dots$  cm [2]

- 12 (a)** Write  $\frac{3}{5}$  as a decimal.

..... [1]

- (b)** Write 48% as a fraction in its simplest form.

..... [2]

- 13** The exchange rate between the dollar and the Thai Baht is \$1 = 32 Baht.

- (a)** Andy buys a watch in New York for \$30.

How much is this in Baht?

..... Baht [1]

- (b)** Ning buys a watch in Bangkok for 6400 Baht.

How much is this in dollars?

\$ ..... [2]

- 14 (a)** A bag contains 3 red, 5 blue and 4 green counters.  
A counter is picked at random.

Work out the probability that the counter is

- (i)** blue,

..... [1]

- (ii)** yellow.

..... [1]

- (b)** The probability of picking a brown counter from another bag is 0.35 .

Work out the probability of not picking a brown counter.

..... [1]

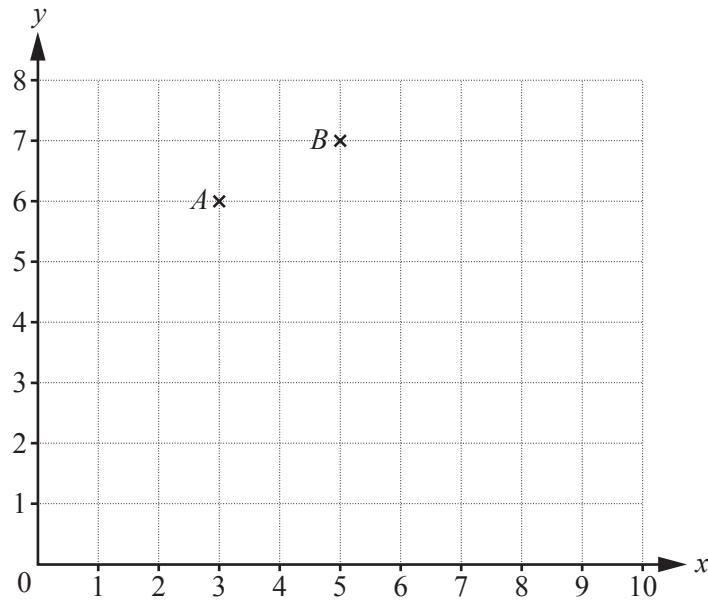
- 15** The table shows the opening hours of a doctor's office.

| Day       | Opening hours |
|-----------|---------------|
| Monday    | 09 00 – 14 00 |
| Tuesday   | 09 00 – 14 00 |
| Wednesday | 09 00 – 16 30 |
| Thursday  | 09 00 – 14 00 |
| Friday    | 09 00 – 18 30 |
| Saturday  | 08 30 – 12 30 |
| Sunday    | CLOSED        |

Work out the total number of hours the office is open during a week.

..... hours [3]

16



- (a)  $A$  is the point  $(3, 6)$  and  $B$  is the point  $(5, 7)$ .

Work out  $\overrightarrow{AB}$ .

$$\overrightarrow{AB} = \begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix} \quad [1]$$

- (b)  $C$  is the point  $(7, 4)$  and  $\overrightarrow{CD} = \begin{pmatrix} 1 \\ 3 \end{pmatrix}$ .

Find the co-ordinates of the point  $D$ .

(....., ..... ) [1]

- 17 Joel works out that the circumference of a circle with radius 10 cm is 628 cm.

- (a) Using the approximation  $\pi = 3$ , estimate the circumference of this circle.

..... cm [2]

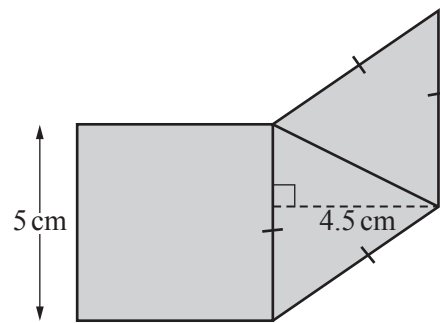
- (b) Using your answer to **part (a)**, explain whether or not Joel's answer is reasonable.

Joel's answer is ..... because .....

..... [1]



- 18 The shaded shape is made by joining a square and two congruent, isosceles triangles.



NOT TO  
SCALE

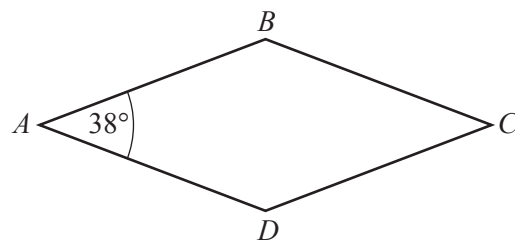
- (a) Work out the perimeter of the shaded shape.

..... cm [1]

- (b) Work out the area of the shaded shape.

..... cm<sup>2</sup> [3]

- 19 (a)



NOT TO  
SCALE

$ABCD$  is a rhombus with angle  $BAD = 38^\circ$ .

Work out angle  $ABC$ .

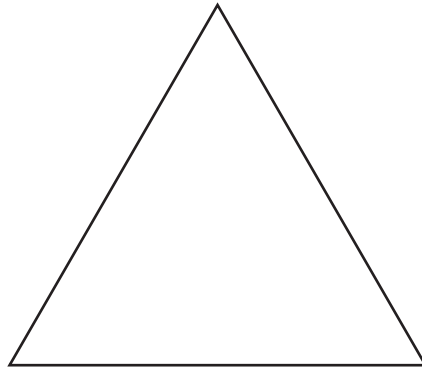
Angle  $ABC =$  ..... [1]

- (b) A regular polygon has an exterior angle of  $40^\circ$ .

Work out the number of sides of this polygon.

..... [2]

- 20 (a) The diagram shows an equilateral triangle.



On the diagram, draw all the lines of symmetry. [2]

- (b) (i) In the space below, draw a quadrilateral that has 2 lines of symmetry and rotational symmetry of order 2.

[1]

- (ii) Write down the mathematical name of your quadrilateral.

..... [1]

- 21 (a) For each of these sequences, write down the next term and the rule for continuing the sequence.

(i) 49, 42, 35, 28, ...

Next term is .....

The rule is ..... [2]

(ii) 2, 6, 18, 54, ...

Next term is .....

The rule is ..... [2]

- (b) Find the  $n$ th term of this sequence.

3, 8, 13, 18, 23, ...

..... [2]

- 22 Solve the system of linear equations.  
You must show all your working.

$$\begin{aligned}5x + 4y &= 17 \\ x - y &= 7\end{aligned}$$

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots [3]$$

**BLANK PAGE**

---

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at [www.cie.org.uk](http://www.cie.org.uk) after the live examination series.

Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.