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0580/11

May/June 2016

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.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

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

- 1 A train leaves Zurich at 22 40 and arrives in Vienna at 07 32 the next day.

Work out the time taken.

..... h min [1]

- 2 From a sample of 80 batteries, 3 are faulty.

Work out the percentage of faulty batteries.

..... % [1]

- 3 In a group of students the probability that a student is left-handed is 0.28.
A student is chosen at random from the group.

Find the probability that this student is not left-handed.

.....[1]

- 4 Write 1.27×10^{-3} as an ordinary number.

.....[1]

- 5 Change 60 000 metres to kilometres.

..... km [1]

- 6 Calculate $(2.1 - 0.078)^{17}$, giving your answer correct to 4 significant figures.

..... [2]

- 7 Write down the mathematical name for

(a) an angle that is less than 90° ,

..... [1]

(b) a five-sided polygon.

..... [1]

- 8 Work out.

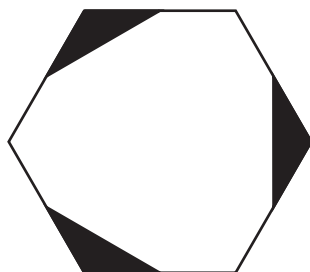
(a) $\begin{pmatrix} -2 \\ -3 \end{pmatrix} + \begin{pmatrix} -4 \\ 7 \end{pmatrix}$

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(b) $5 \begin{pmatrix} 2 \\ -8 \end{pmatrix}$

$\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

9



- (a) Write down the order of rotational symmetry of the shape.

..... [1]

- (b) Draw all the lines of symmetry on the shape.

[1]

- 10** Omar changes 2000 Saudi Arabian riyals (SAR) into euros (€) when the exchange rate is €1 = 5.087 SAR.

Work out how much Omar receives, giving your answer correct to the nearest euro.

€ [2]

- 11** Find the lowest common multiple (LCM) of 36 and 48.

..... [2]

- 12** $y = mx + c$

Find the value of y when $m = -2$, $x = -7$ and $c = -3$.

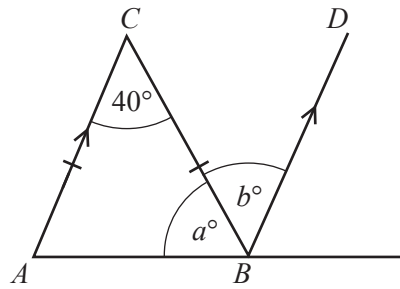
$y =$ [2]

- 13** $y = \frac{qx}{p}$

Write x in terms of p , q and y .

$x =$ [2]

14

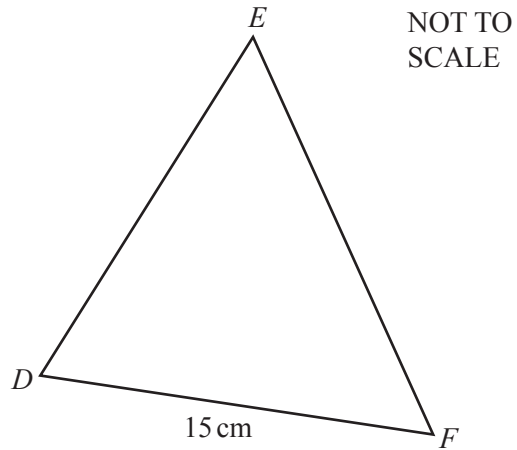
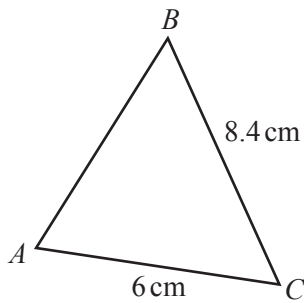
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Triangle ABC is isosceles and AC is parallel to BD .

Find the value of a and the value of b .

 $a = \dots\dots\dots$
 $b = \dots\dots\dots [2]$

15 Triangle ABC and triangle DEF are similar.

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Calculate the length of EF .

 $EF = \dots\dots\dots \text{ cm } [2]$

- 16** Without using a calculator, work out $\frac{6}{7} \div 1\frac{2}{3}$.

Show all your working and give your answer as a fraction in its lowest terms.

..... [3]

- 17** Find the next term in each of these sequences.

(a) 3, 7, 11, 15, ...

..... [1]

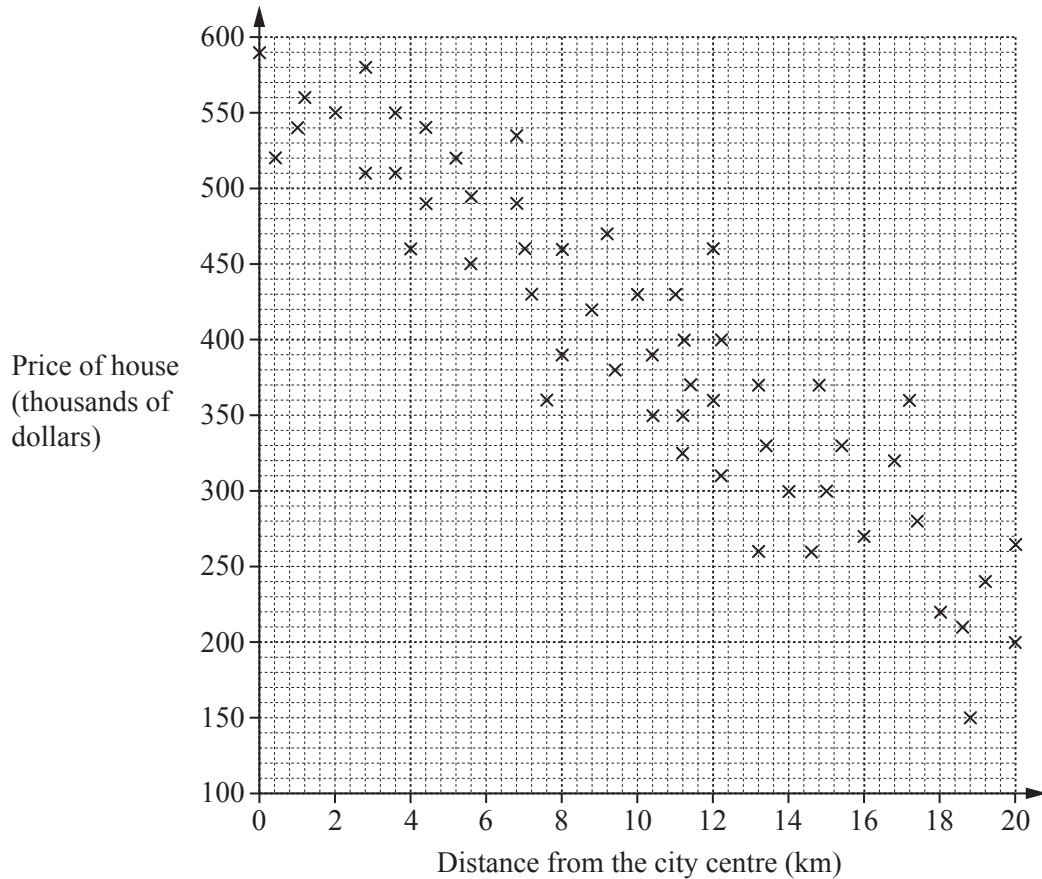
(b) 10, 7, 4, 1, ...

..... [1]

(c) 1, 9, 25, 49, ...

..... [1]

- 18 The scatter diagram shows the prices of houses for sale and their distances from the city centre.



- (a) What type of correlation is shown in this scatter diagram?

..... [1]

- (b) Brad wants to live as close to the city centre as possible.
He has a maximum of \$500 000 to spend on one of these houses.

How close to the city centre can he live?

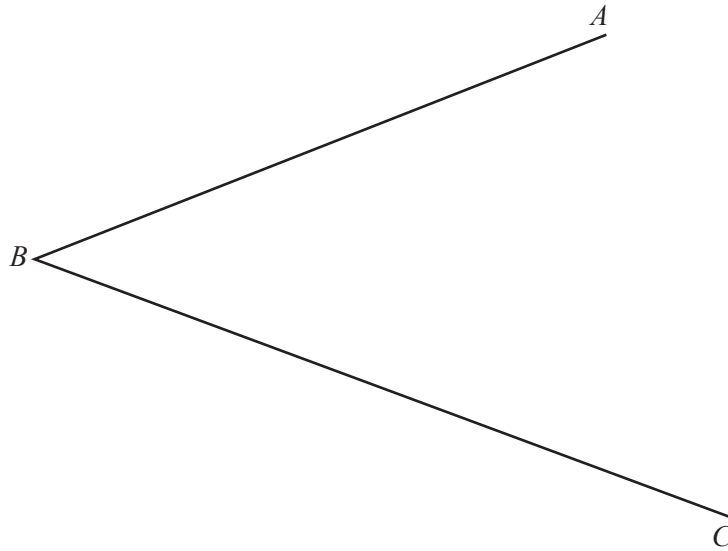
..... km [1]

- (c) (i) Draw a line of best fit on the scatter diagram. [1]

- (ii) Estimate the price of a house that is 14 km from the city centre.

\$..... [1]

- 19 (a) Using a straight edge and compasses only, construct the bisector of angle ABC .



[2]

- (b) Using a straight edge and compasses only, construct the perpendicular bisector of the line DE .



[2]

- 20** Solve the simultaneous equations.
You must show all your working.

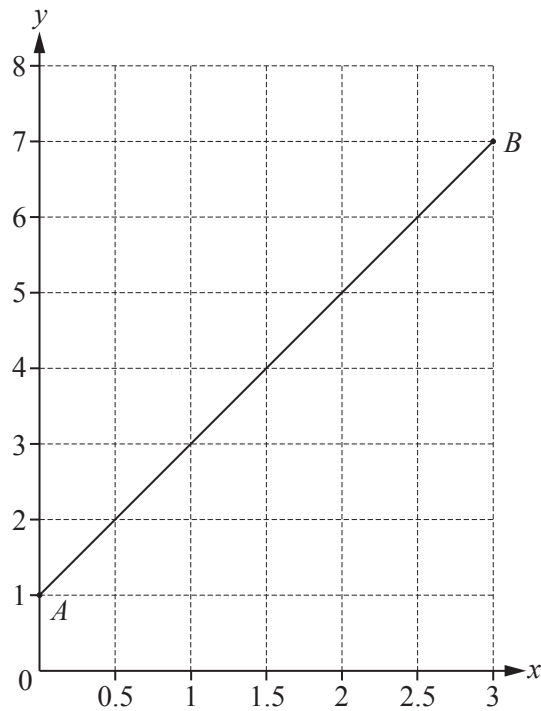
$$2x + 3y = 15$$

$$5x + 4y = 13$$

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

$$y = \dots\dots\dots [4]$$

21 (a)



The line AB is drawn on the grid.

(i) Write down the co-ordinates of A .

(.....,) [1]

(ii) Work out the gradient of the line AB .

..... [2]

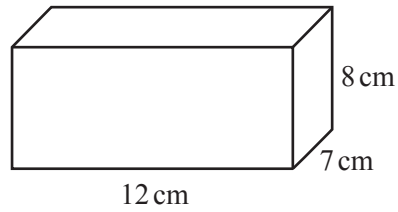
(iii) Write down the equation of the line AB in the form $y = mx + c$.

$y =$ [2]

(b) Write down the equation of a straight line that is parallel to $y = 5x - 3$.

..... [1]

22 (a)

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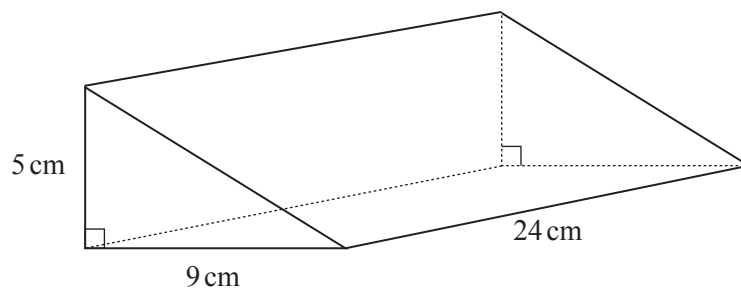
Calculate the volume of this cuboid.

..... cm^3 [2](b) Another cuboid has width 6 cm, height 9 cm and volume 675 cm^3 .

Calculate the length of this cuboid.

..... cm [2]

(c) The diagram shows a right-angled triangular prism.

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Calculate the volume of this prism.

..... cm^3 [3]

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