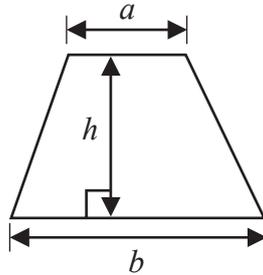


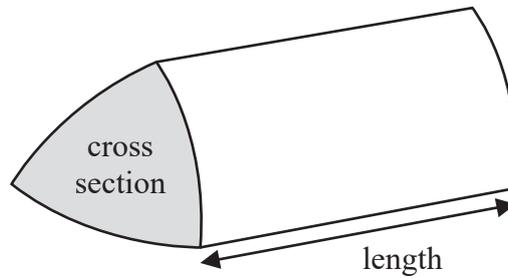


**International GCSE Mathematics**  
**Formulae sheet – Foundation Tier**

**Area of trapezium** =  $\frac{1}{2}(a + b)h$

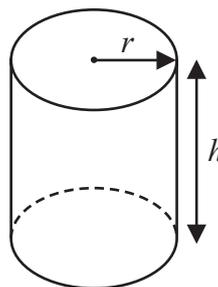


**Volume of prism** = area of cross section  $\times$  length



**Volume of cylinder** =  $\pi r^2 h$

**Curved surface area of cylinder** =  $2\pi r h$



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**Answer ALL TWENTY EIGHT questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

- 1** Cho finds this information about the areas, in square kilometres, of some South American countries.

Country	Area (square kilometres)
Paraguay	406 752
Suriname	163 800
Uruguay	173 626
Venezuela	926 690
Chile	756 100

- (a) Which of these countries has the largest area?

..... (1)

- (b) Write the number 163 800 in words.

.....  
 ..... (1)

- (c) Circle the word that describes the value of the 7 in 406 752

7 tenths    7 tens    7 hundreds    7 hundredths    7 thousandths (1)

- (d) Write the number 173 626 correct to the nearest thousand.

..... (1)

- (e) Work out the difference between the area of Chile and the area of Uruguay.

..... square kilometres (1)

**(Total for Question 1 is 5 marks)**



2 Zia asks 20 adults to name their favourite African animal.  
Here are her results.

elephant	rhinoceros	rhinoceros	lion	elephant
lion	zebra	elephant	rhinoceros	lion
buffalo	elephant	buffalo	buffalo	elephant
rhinoceros	lion	rhinoceros	elephant	zebra

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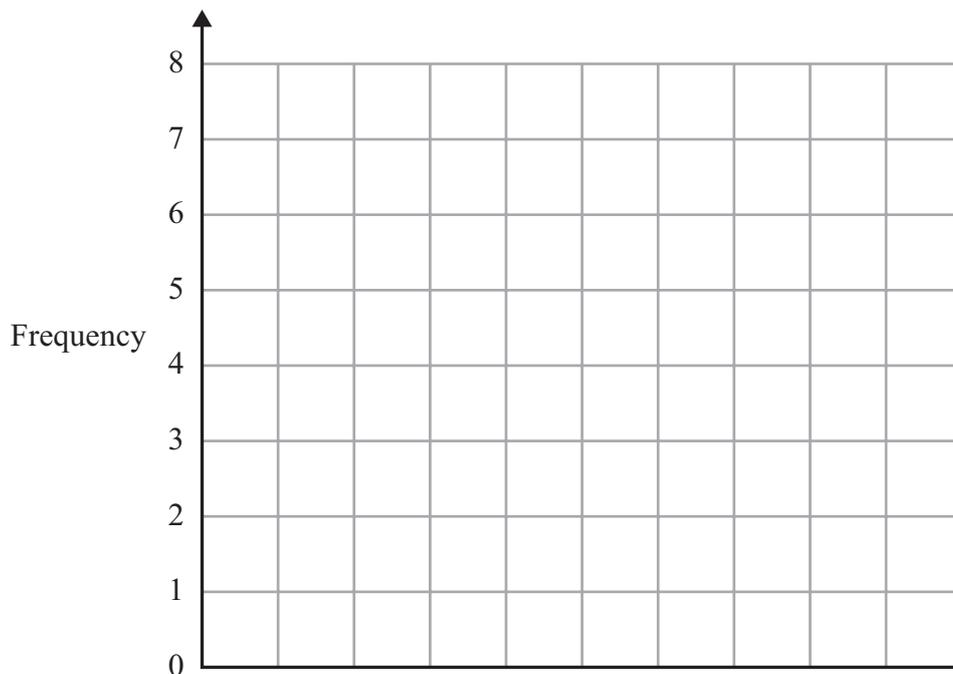
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(a) Complete the frequency table to show this information.

Animal	Tally	Frequency
elephant		
lion		
buffalo		
rhinoceros		
zebra		

(2)

(b) Complete the bar chart for the information in your table.



(3)

(Total for Question 2 is 5 marks)



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3 (a) Simplify  $d + d + d + d$

.....  
(1)

(b) Simplify  $w \times w \times w \times w \times w$

.....  
(1)

(c) Solve  $6x = 42$

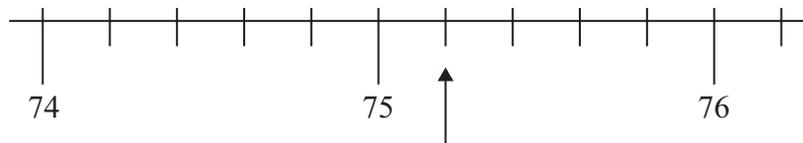
$x =$  .....  
(1)

(d) Simplify  $7r + 9y + 3r - 4y$

.....  
(2)

**(Total for Question 3 is 5 marks)**

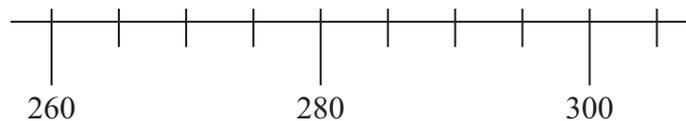
4 The diagram shows a number line.



(a) Write down the number marked with the arrow.

.....  
(1)

(b) On the number line below, mark with an arrow (↑) the number 265

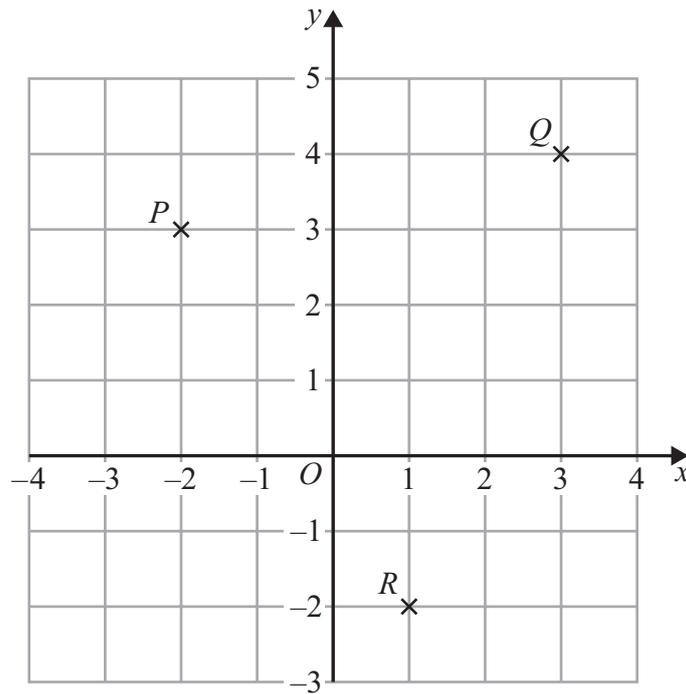


.....  
(1)

**(Total for Question 4 is 2 marks)**



5 The diagram shows three points,  $P$ ,  $Q$  and  $R$ , marked on a grid.



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(a) Write down the coordinates of point  $P$

(....., .....)  
(1)

(b) On the grid, mark with a cross ( $\times$ ) the point with coordinates  $(3, -1)$   
Label this point  $T$

(1)

(c) Find the coordinates of the midpoint of  $QR$

(....., .....)  
(2)

**(Total for Question 5 is 4 marks)**



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6 (a) Write  $\frac{19}{5}$  as a mixed number.

.....  
(1)

(b) Circle the two fractions that are equivalent.

$\frac{19}{20}$	$\frac{4}{5}$	$\frac{20}{24}$	$\frac{28}{35}$	$\frac{5}{9}$
-----------------	---------------	-----------------	-----------------	---------------

(1)

(c) Write 0.3 as a fraction.

.....  
(1)

**(Total for Question 6 is 3 marks)**

7 2 cupcakes and 5 doughnuts cost \$4.50  
3 cupcakes cost \$2.25

Work out the cost of 1 doughnut.

\$.....

**(Total for Question 7 is 4 marks)**

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8

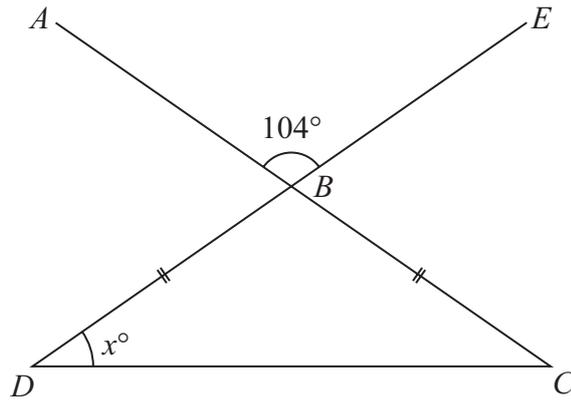


Diagram **NOT** accurately drawn

$ABC$  and  $EBD$  are straight lines.  
 Triangle  $BCD$  is isosceles with  $BD = BC$

Angle  $ABE = 104^\circ$

Work out the value of  $x$

$x = \dots\dots\dots$

**(Total for Question 8 is 3 marks)**

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- 9 Roy has 2 litres of orange juice in a jug and some empty cups.  
He pours orange juice from the jug to completely fill as many cups as possible.  
He pours 180 millilitres of orange juice into each cup.

Work out how much orange juice Roy has left in the jug after he has completely filled as many cups as possible.  
Give your answer in millilitres.

..... millilitres

**(Total for Question 9 is 4 marks)**



10 Lui is asked to work out the value of  $30 - 4x$  when  $x = -5$

Here is his working and his answer.

$$\begin{aligned}30 - 4x &= 30 - 4 \times -5 \\ &= 30 - 20 \\ &= 10\end{aligned}$$

Lui's answer is wrong.

(a) Explain what Lui has done wrong in his working.

(1)

Oni thinks of a number.  
She calls the number  $Y$

$Y$  is a **positive, odd** number and  $Y \leq 9$

(b) Write down all the possible values of  $Y$

(2)

(Total for Question 10 is 3 marks)

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- 11** The children at a holiday club play sport either on Monday or on Tuesday. They each choose one sport from tennis or athletics or cricket. The two-way table shows some information about their choices.

	tennis	athletics	cricket	Total
Monday	29		58	110
Tuesday				
Total	62		105	240

- (a) Complete the two-way table.

(3)

One of the children who plays cricket is chosen at random.

- (b) Write down the probability that this child plays cricket on Monday.

.....  
(1)

**(Total for Question 11 is 4 marks)**



12 (a) Make  $y$  the subject of  $w = 3y - d$

.....  
(2)

Diego buys  $b$  boxes of crayons and  $p$  packets of crayons.

There are 12 crayons in each box.

There are 3 crayons in each packet.

Diego buys a total of  $T$  crayons.

(b) Write down a formula for  $T$  in terms of  $b$  and  $p$

.....  
(3)

**(Total for Question 12 is 5 marks)**

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13 Work out the value of  $\frac{9.75 - 1.4^2}{9.2 + \sqrt{6.3}}$

Write down all the figures on your calculator display.

.....  
(Total for Question 13 is 2 marks)

14 A company makes cars.

The company makes 125 cars each hour for 9 hours a day.

The company makes cars for 5 days each week.

24% of the cars the company makes are red.

Work out the number of red cars that the company makes each week.

.....  
(Total for Question 14 is 3 marks)



15 A circle has radius 16 cm

Calculate the circumference of the circle.  
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 15 is 2 marks)

16 The diagram shows the positions of two villages, *A* and *B*

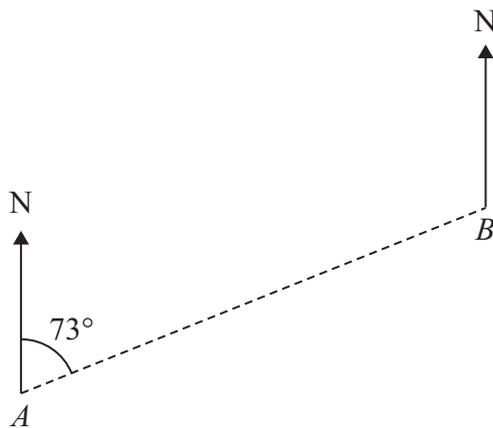


Diagram **NOT**  
accurately drawn

The bearing of *B* from *A* is  $073^\circ$

Work out the bearing of *A* from *B*

..... °

(Total for Question 16 is 2 marks)

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17 Here is a list of ingredients to make spaghetti carbonara for 4 people.

**Spaghetti carbonara**  
**Ingredients for 4 people**

100 g pancetta  
 50 g cheese  
 300 g spaghetti  
 40 g butter  
 2 eggs

Joe is going to make spaghetti carbonara for 12 people.

(a) Work out how much cheese he needs.

..... g  
 (2)

Ruhi makes spaghetti carbonara.  
 She uses 180 g of butter.

(b) Work out how many people Ruhi makes the spaghetti carbonara for.

.....  
 (2)

**(Total for Question 17 is 4 marks)**



**18** Rio has six cards.

He writes a number on each card so that

the range of the numbers is 10

the median of the numbers is 7.5

the mode of the numbers is 6

Rio arranges the cards so that the numbers are in order of size.

		6		10	14
--	--	---	--	----	----

Three of the numbers are hidden.

Complete the cards above to show the three numbers that are hidden.

**(Total for Question 18 is 3 marks)**

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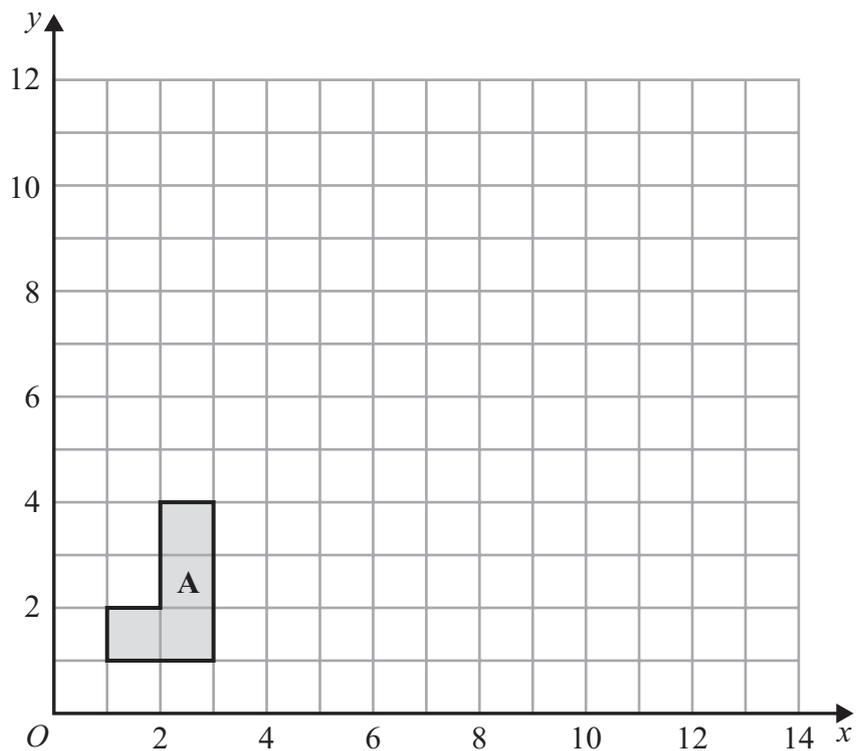


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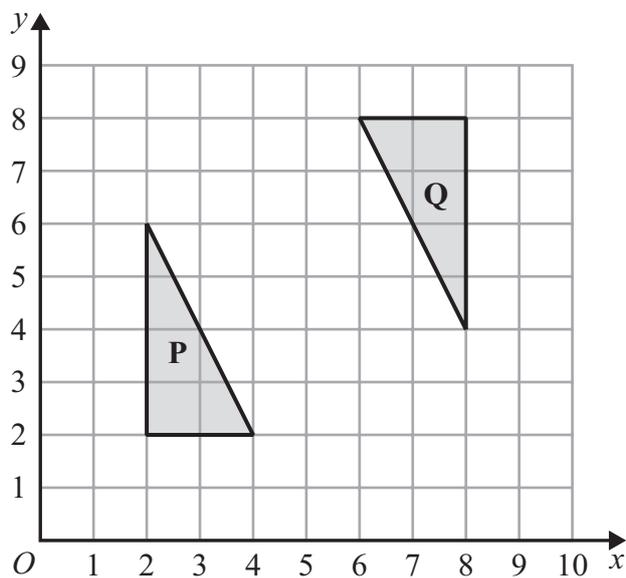
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19



(a) On the grid, enlarge shape A with scale factor 3 and centre (0, 1)

(2)



(b) Describe fully the single transformation that maps triangle P onto triangle Q

(3)

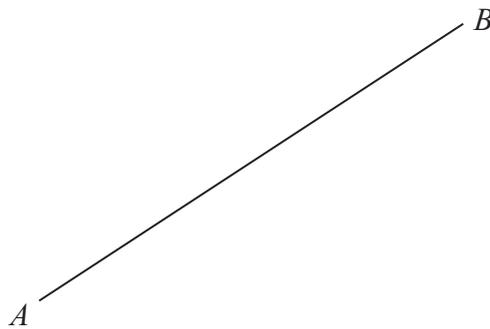
(Total for Question 19 is 5 marks)



20 Show that  $7\frac{1}{3} - 3\frac{4}{7} = 3\frac{16}{21}$

(Total for Question 20 is 3 marks)

- 21 Using ruler and compasses only, construct the perpendicular bisector of the line  $AB$   
Show all your construction lines.



(Total for Question 21 is 2 marks)

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22 The diagram shows two similar quadrilaterals,  $ABCD$  and  $EFGH$

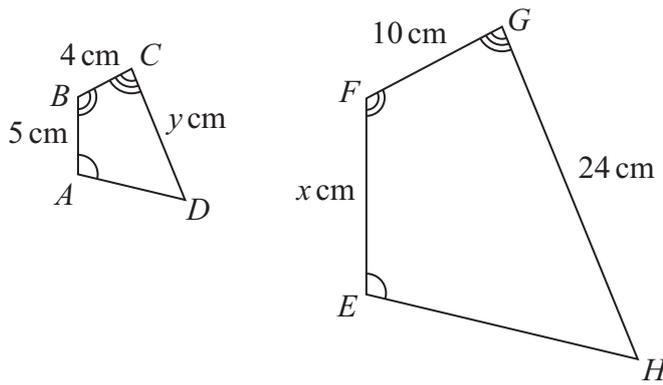


Diagram **NOT** accurately drawn

$$AB = 5 \text{ cm} \quad BC = 4 \text{ cm} \quad CD = y \text{ cm}$$

$$EF = x \text{ cm} \quad FG = 10 \text{ cm} \quad GH = 24 \text{ cm}$$

(a) Work out the value of  $x$

$$x = \dots\dots\dots (2)$$

(b) Work out the value of  $y$

$$y = \dots\dots\dots (2)$$

(Total for Question 22 is 4 marks)

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**23** Pau, Sam and Tia share £240 in the ratios 3 : 4 : 5

Sam and Tia each give £10 of their share to Pau.

Work out the ratios of the amounts of money that Pau, Sam and Tia now have.  
Give your answer in its simplest form.

..... : ..... : .....

**(Total for Question 23 is 4 marks)**

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**24** Tim buys a bracelet for 4000 Swiss francs.  
 The value of the bracelet increases by 7% each year.  
 Work out the value of the bracelet at the end of 3 years.  
 Give your answer correct to the nearest Swiss franc.

..... Swiss francs

**(Total for Question 24 is 3 marks)**

**25** Solve the simultaneous equations

$$\begin{aligned} 3x + 5y &= 8 \\ 4x + y &= -3.5 \end{aligned}$$

Show clear algebraic working.

$x =$  .....

$y =$  .....

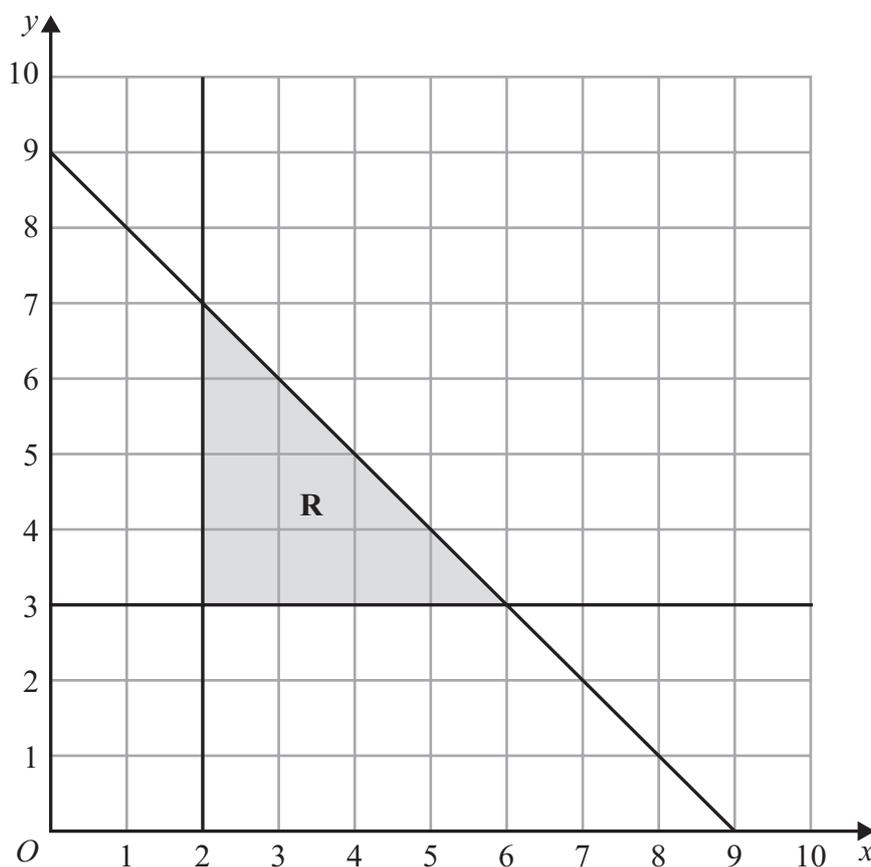
**(Total for Question 25 is 3 marks)**



26 (a) Solve the inequality  $7 - 3t < 2t + 15$

.....  
(2)

The region **R**, shown shaded in the diagram, is bounded by three straight lines.



(b) Write down three inequalities that define the region **R**

.....  
.....  
.....  
(3)

(Total for Question 26 is 5 marks)



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27  $ABD$  and  $ABC$  are right-angled triangles.

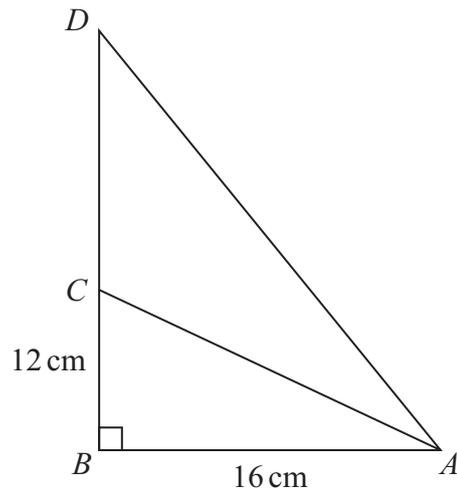


Diagram **NOT** accurately drawn

$AB = 16 \text{ cm}$      $BC = 12 \text{ cm}$      $AD = 1.5 \times AC$

Find the length of  $CD$

Give your answer correct to 3 significant figures.

..... cm

(Total for Question 27 is 5 marks)



**28** Khalid has a box of counters.

- 17 of the counters are red
- 28 of the counters are blue
- the rest of the counters are orange

Khalid is going to take at random a counter from the box.

The probability that Khalid will take an orange counter is  $\frac{4}{9}$

Work out the number of orange counters that are in the box.

.....  
**(Total for Question 28 is 3 marks)**

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**TOTAL FOR PAPER IS 100 MARKS**

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