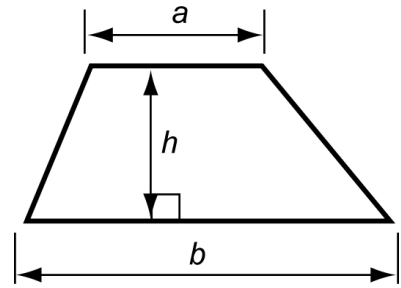
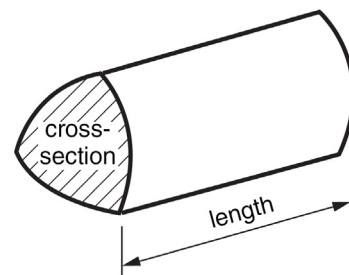


Formulae Sheet: Foundation Tier

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



Volume of prism = (area of cross-section) \times length



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1 Work out.

(a) $321 + 128$

(a) _____ [1]

(b) $456 - 139$

(b) _____ [2]

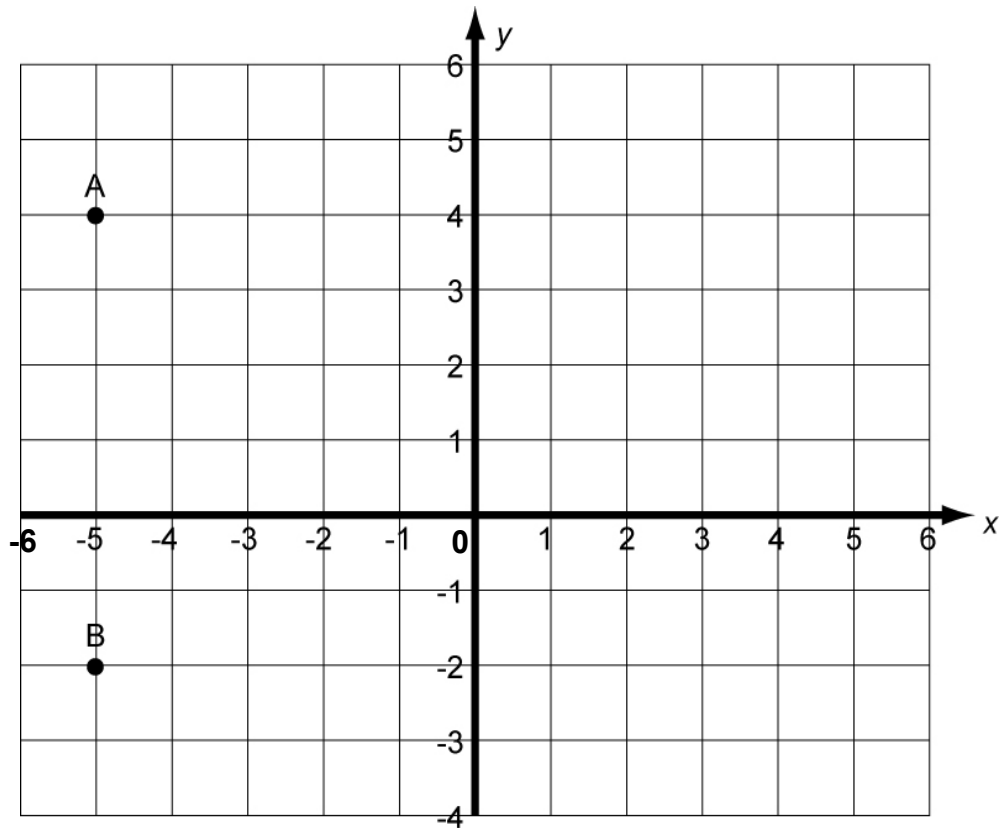
(c) $654 \cdot 8 \div 100$

(c) _____ [1]

(d) 7×10^{-3}

(d) _____ [1]

2



(a) Write down the coordinates of point A.

(a) (_____ , _____) [1]

(b) (i) Plot point C at $(-1, -2)$

[1]

(ii) Join points A, B and C to make a triangle.

What type of triangle is this?

(b)(ii) _____ [1]

(c) Reflect triangle ABC in the y -axis.

[1]

3 Jaroslaw carried out a survey to find the favourite type of music of 60 Year 11 students.

This pictogram summarises his results.

Dance	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺
Hip Hop	☺ ☺ ☺ ☺ ☺ ☺
Indie	
Niche	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺
Rap	☺ ☺
R & B	☺ ☺ ☺ ☺

Key: ☺ = 2 students

(a) How many students preferred Rap?

(a) _____ [1]

(b) Complete the row for Indie.

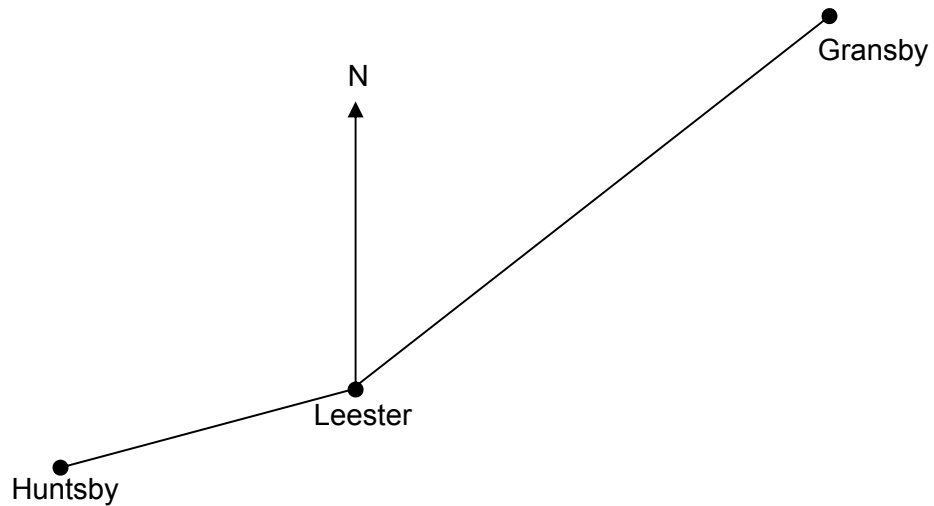
[3]

(c) What type of music did $\frac{1}{5}$ of the students choose?

(c) _____ [2]

4 This scale diagram shows the location of three towns.

Scale: 1 cm represents 2 km



(a) What is the actual distance from Huntsby to Leester?

(a) _____ km [1]

(b) Measure the bearing of Gransby from Leester.

(b) _____ ° [1]

(c) Ash Vale is 15 km from Leester on a bearing of 284°

Mark and label the position of Ash Vale on the scale diagram above.

[2]

- 5 The temperature at lunchtime one day in December was 3°C .
At 10pm the temperature had fallen by 8°C .

What was the temperature at 10pm?

_____ $^{\circ}\text{C}$ [2]

- 6 (a) Fill in the boxes.

$$\frac{3}{4} = \frac{\boxed{}}{12} = \frac{36}{\boxed{}}$$

[2]

- (b) Write these in order of size, starting with the smallest.
You must show your working.

$$\frac{4}{5} \quad 0.6 \quad 53\% \quad \frac{8}{100}$$

_____ [2]
smallest

7 (a) Choose words from the box to complete the sentences.

litres	square metres	centimetres
kilograms	metres	grams
tonnes	kilometres	

- (i) The length of an Olympic swimming pool is 50 _____ . [1]
- (ii) The volume of a swimming pool is 3 000 000 _____ . [1]
- (iii) A swimmer weighs 60 _____ . [1]

(b) A swimming gala was held at the local pool.
Hensford Dolphins entered 7 swimmers in the front crawl event.
Here are the times, in seconds, they took to complete the race.

43.8 53.7 67.9 59.2 43.8 51.4 47.5

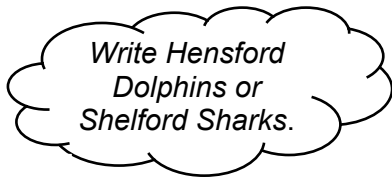
- (i) What was the median time they took to complete the race?

(b)(i) _____ s [2]

- (ii) Shelford Sharks also entered some swimmers in the front crawl event. Their results, in seconds, are summarised in the table.

Mean	49.5
Median	50.8
Mode	41.2
Range	32.8

Which team was more consistent?
Explain how you decided.



_____ because _____

_____ [2]

- (c) (i) Emad started selling programmes at 8:45 am.
It took him 35 minutes to sell all the programmes.

At what time did he finish selling programmes?

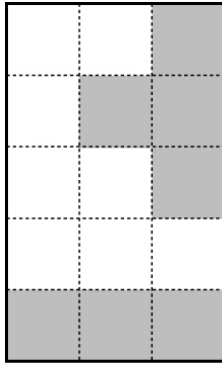
(c)(i) _____ [1]

- (ii) The swimming gala started at 9:40 am and ended at 4:25 pm.

How long did the gala last?

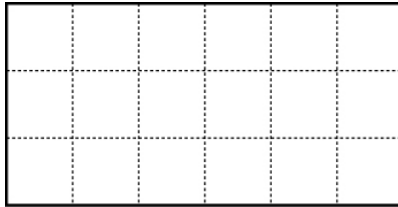
(ii) _____ hours _____ minutes [2]

8 (a) What fraction of this shape has been shaded?



(a) _____ [1]

(b) Shade $\frac{2}{3}$ of this shape.



[1]

(c) (i) Write 50% as a fraction.

(c)(i) _____ [1]

(ii) Write $\frac{1}{4}$ as a decimal.

(ii) _____ [1]

(iii) Write 0.2 as a percentage.

(iii) _____ % [1]

9 An ice-cream seller has 3 flavours of ice cream:

Strawberry (S), Vanilla (V), Chocolate (C).

(a) Alison buys a cornet and chooses two scoops of ice-cream.

List the nine combinations of flavours she could choose.



First scoop	Second scoop

[2]

(b) Kornelija buys a cornet. She chooses two scoops of ice-cream at random.

Work out the probability that Kornelija picks a cornet containing

(i) strawberry ice-cream,

(b)(i) _____ [1]

(ii) mint ice-cream.

(ii) _____ [1]

(c) Molly buys a cornet. She chooses two scoops of ice-cream at random.

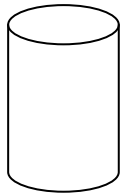
What is the probability that Molly picks a cornet with both scoops the same flavour?
Give your answer in its simplest form.

(c) _____ [2]

10 (a) Here are the names of some solid shapes.

triangular based pyramid	cuboid
cone	sphere
triangular prism	cube
	cylinder

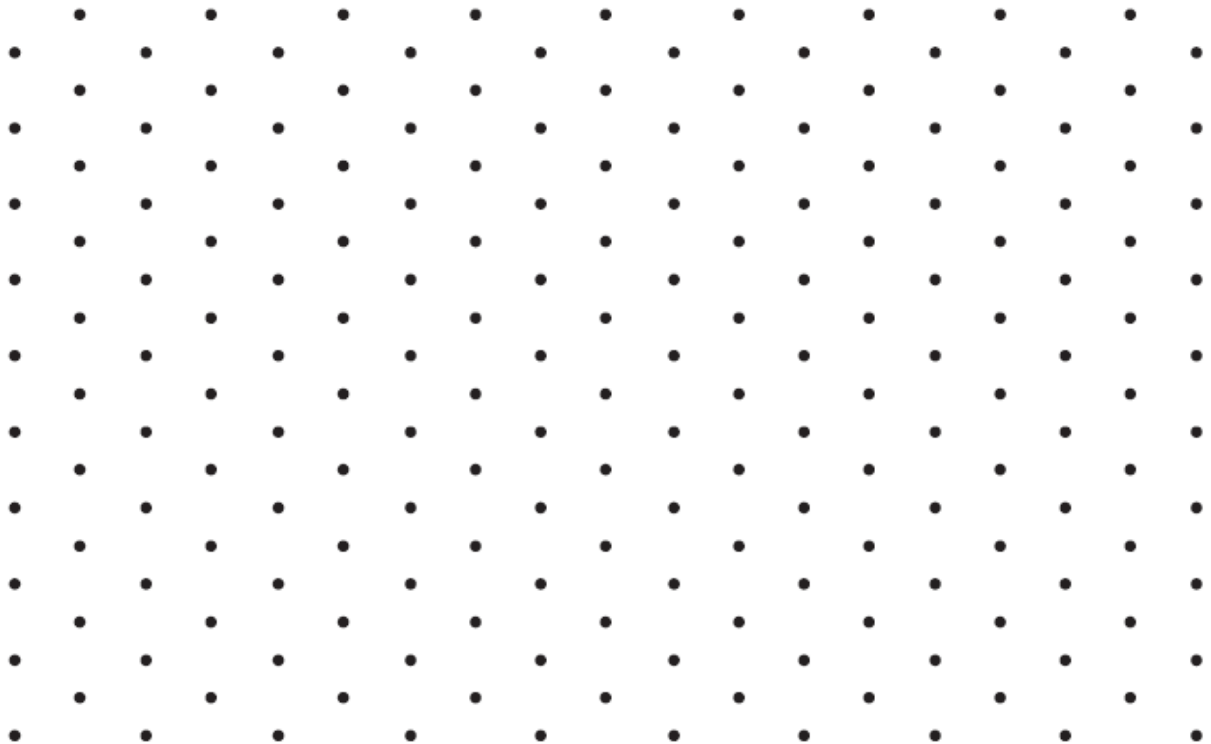
Write the correct name under each of the solids below.



[2]

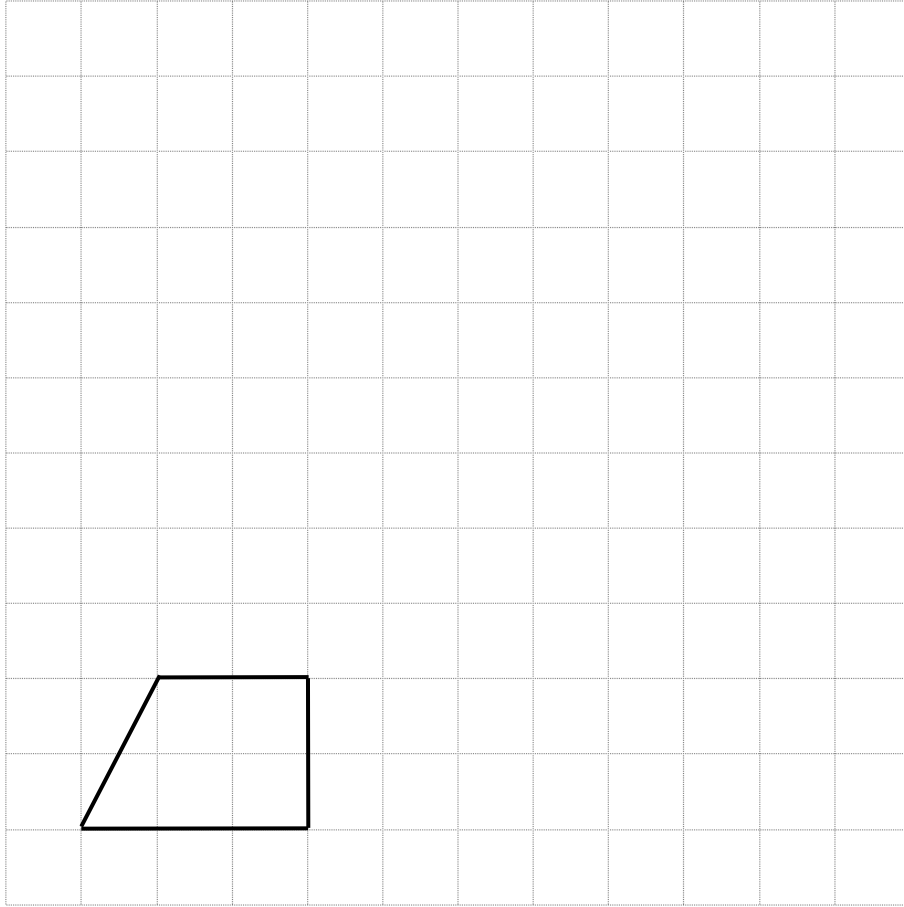
(b) A cuboid measures 2 cm by 3 cm by 4 cm.

Make a full-size isometric drawing of the cuboid.



[2]

11 Enlarge this shape with scale factor 3.



[2]

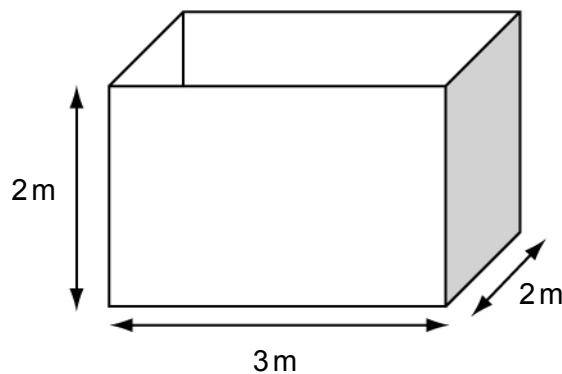
- 12* Roger wants to pack some of his belongings in a storage container. He knows that some space has to be allowed for packing materials and cannot be used for storage. He sees these two adverts.

Safety Storage Container

Total volume 10 m^3

You must allow of 10% of this space for packing material

Wonder Storage Container



You must allow 30% of this space for packing material

Which container has the greater volume that Roger can use for storage?
Show how you decide.

- 13 Complete the table below, using a tick (✓) for true statements and a cross (✗) for false statements. Two boxes have been completed for you.

	All angles 90°	All sides equal length	Opposite sides are parallel
Square	✓		
Parallelogram	✗		
Rhombus			

[3]

- 14 Calculate.

(a) $\frac{3}{5} - \frac{1}{4}$

(a) _____ [2]

(b) $3\frac{1}{4} \times 1\frac{2}{3}$

Give your answer as a mixed number.

(b) _____ [3]

15 Solve.

(a) (i) $14 + x = 19$

(a)(i) $x =$ _____ [1]

(ii) $5x = 30$

(ii) $x =$ _____ [1]

(iii) $4x - 2 = 18$

(iii) $x =$ _____ [2]

(iv) $\frac{4x}{3} = 20$

(iv) $x =$ _____ [2]

(b) $A = x^2 + 5x$

Work out A when $x = 3$.

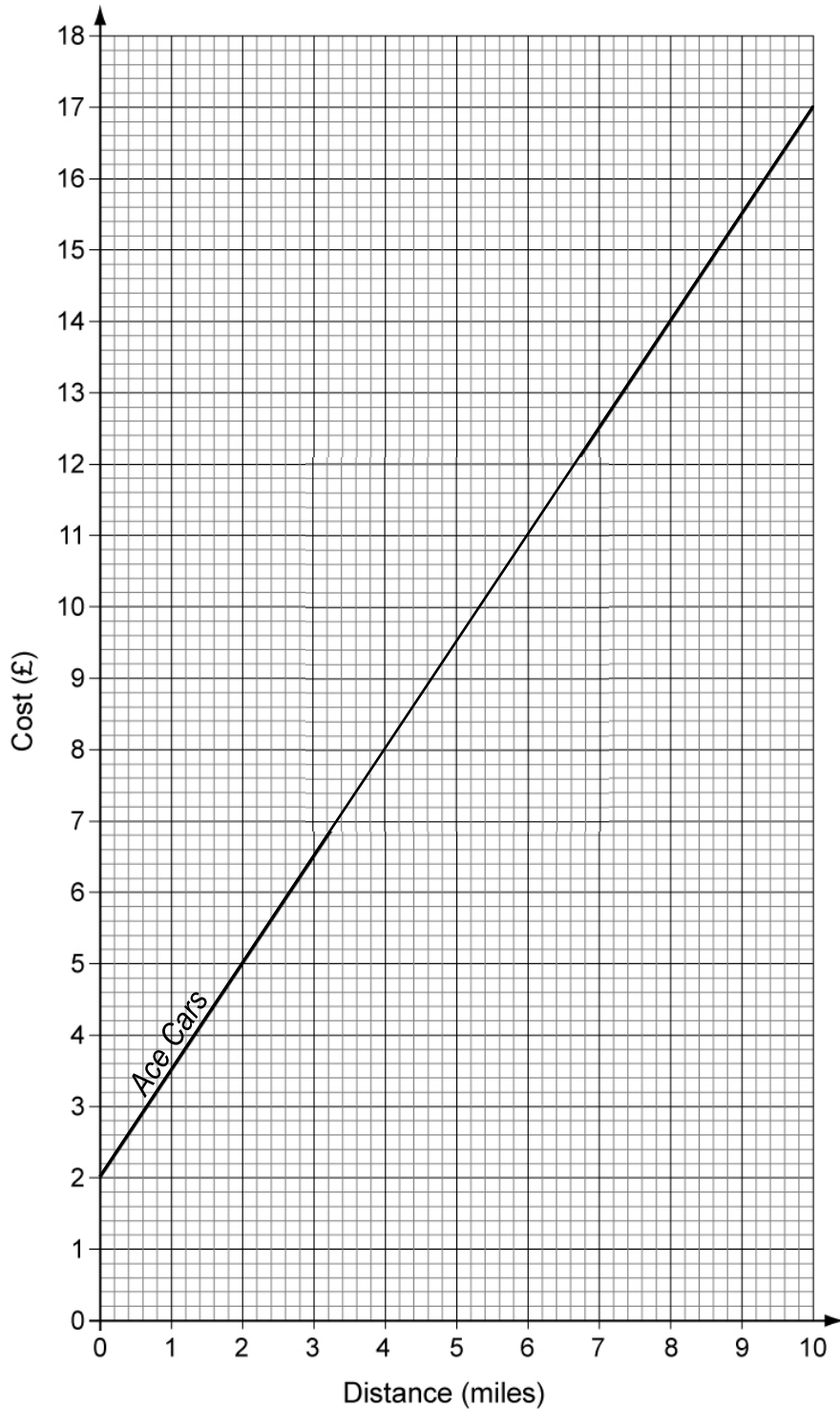
(b) _____ [2]

(c) Factorise.

$$3x^2 + 12xy$$

(c) _____ [2]

- 16 *Ace Cars* and *Ready To Go* are two minicab firms.
This graph shows how much *Ace Cars* charges for journeys.



- (a) How much does *Ace Cars* charge for a journey of 3 miles?

(a) £ _____ [1]

(b) *Ready To Go* uses this formula to calculate its charges.

$$C = 4 + 1.2m$$

C is the cost in £,
 m is the number of miles.

(i) Complete this table for the charges for *Ready To Go*.

m	1	4	10
C			

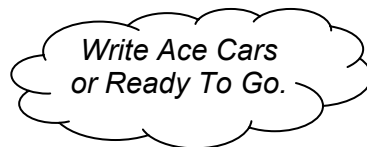
[1]

(ii) Draw the graph of the charges for *Ready To Go* on the same grid as that for *Ace Cars*.

[2]

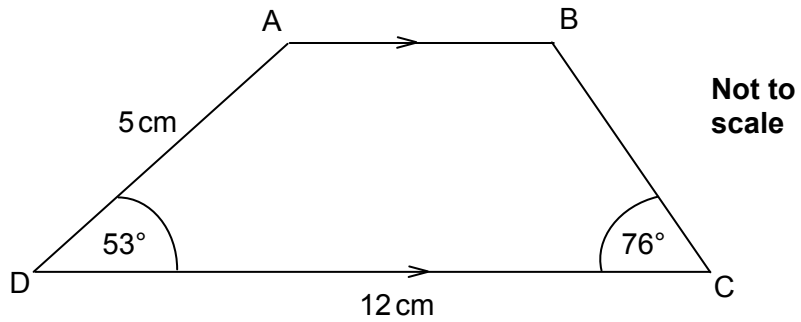
(c) Johir needs to order a minicab to take him to the station. The distance is 9 miles.

Which of the two minicab firms is cheaper for this journey, and by how much?



(c) _____ by _____ [2]

17 This is a sketch of a trapezium.

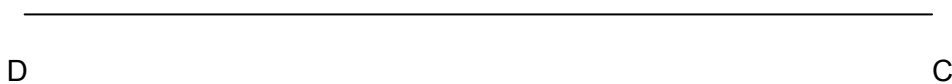


DA = 5 cm.

Angle CDA = 53° and angle BCD = 76° .

AB is parallel to DC.

- (a) Draw the trapezium full size.
DC has been drawn for you.



[4]

- (b) Use measurements from your diagram to calculate the area of the trapezium.

(b) _____ [4]

18 A newspaper reports that people prefer watching films at home on DVD rather than going to the cinema.

- (a)** Mike and Panna are asked to find out if this is true in their town.
Mike suggests they do a survey outside the cinema.
Panna says that this is not a good idea because the results will not represent people in their town.

Explain why Panna is likely to be correct.

[1]

- (b)** Mike and Panna decide to write a questionnaire.

Write a question they could use to find out how many films people watch each year.
You should include response boxes.

[2]

19 (a)

$$C = \frac{5}{9}(F - 32)$$

$$F = 1.8C + 32$$

C is the temperature in degrees Centigrade,
 F is the temperature in degrees Fahrenheit.

Max flew from Manchester to New York in January 2010.

When he left Manchester the temperature was -3°C .

When he arrived in New York the temperature was 23°F .

Which city was colder, and what was the difference in the temperature?

*Write Manchester
or New York.*

(a) _____ by _____ [4]

(b) *

1 litre is approximately 0.26 US gallons.

1 US gallon is approximately 3.8 litres.

In January 2010 the exchange rate between pounds and dollars was approximately £1 = \$1.50.

When Max left Manchester the price of petrol was £1.15 per litre.
In New York the price of petrol was \$3.00 per US gallon.

Decide in which city petrol was cheaper.

(b) _____ [3]

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