

Ratios (inc Scales)

Question Paper 2

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| Level | IGCSE |
| Subject | Maths (0580) |
| Exam Board | Cambridge International Examinations (CIE) |
| Paper Type | Extended |
| Topic | Number |
| Sub-Topic | Ratios (inc Scales) |
| Booklet | Question Paper 2 |

Time Allowed: 64 minutes

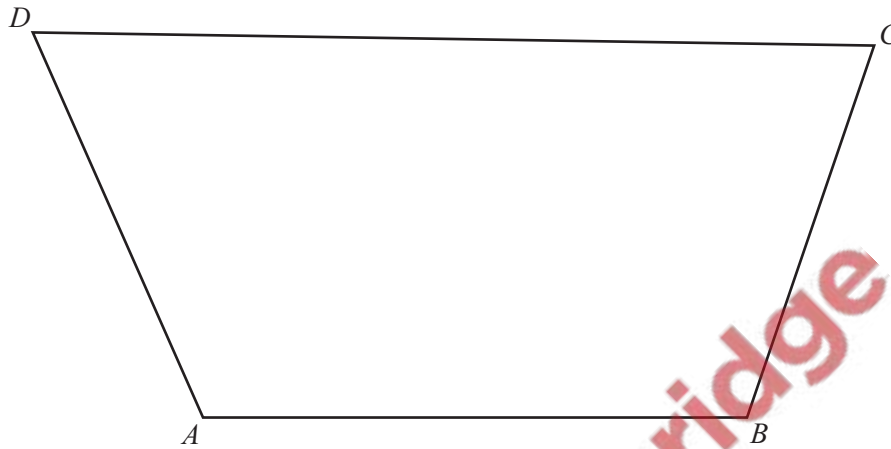
Score: /53

Percentage: /100

Grade Boundaries:

| A* | A | B | C | D | E | U |
|------|-----|-----|-----|-----|-----|------|
| >85% | 75% | 60% | 45% | 35% | 25% | <25% |

- 1 The diagram shows the plan, $ABCD$, of a park.
The scale is 1 centimetre represents 20 metres.



Scale: 1 cm to 20 m

- (a) Find the actual distance BC .

Answer(a) m [2]

- (b) A fountain, F , is to be placed

- 160 m from C
- and
- equidistant from AB and AD .

On the diagram, **using a ruler and compasses only**, construct and mark the position of F .
Leave in all your construction lines.

[5]

2 (a) Alfonso has \$75 to spend on the internet.
He spends some of the money on music, films and books.

(i) The money he spends on music, films and books is in the ratio

$$\text{music : films : books} = 5 : 3 : 7.$$

He spends \$16.50 on music.

Calculate the **total** amount he spends on music, films and books.

Answer(a)(i) \$ [3]

(ii) Find this total amount as a percentage of the \$75.

Answer(a)(ii) % [1]

(b) The download times for the music, films and books are in the ratio

$$\text{music : films : books} = 2 : 9 : 1.$$

The **total** download time is 3 hours and 33 minutes.

Calculate the download time for the films.

Give your answer in hours, minutes and seconds.

Answer(b) hours minutes seconds [3]

(c) The cost of \$16.50 for the music was a reduction of 12% on the original cost.

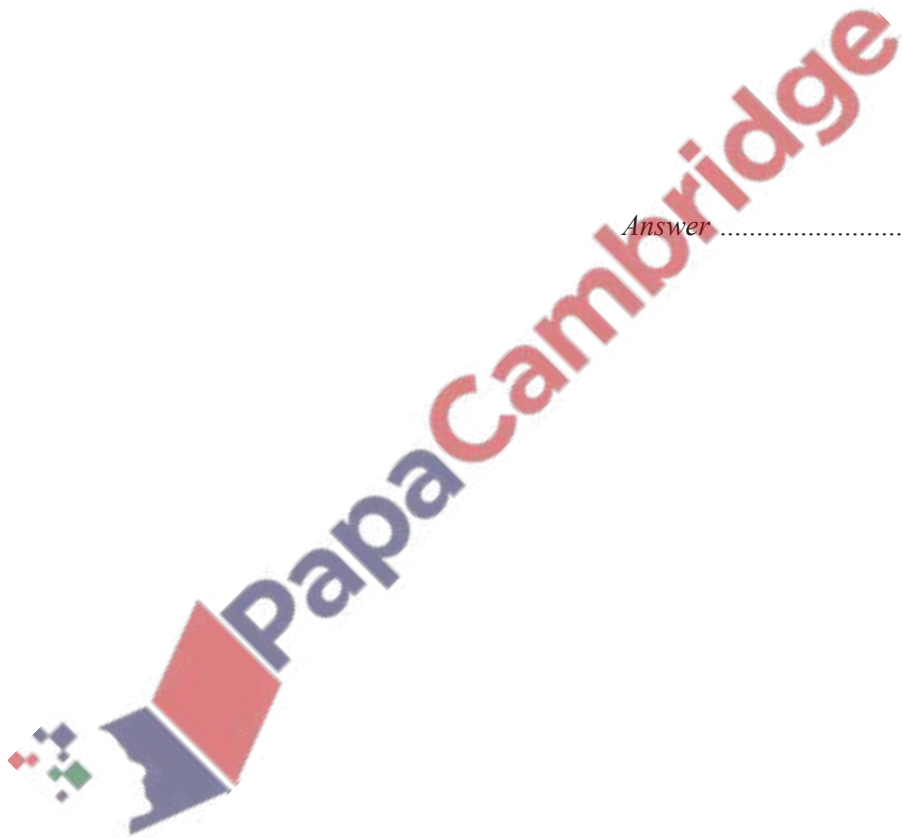
Calculate the original cost of the music.

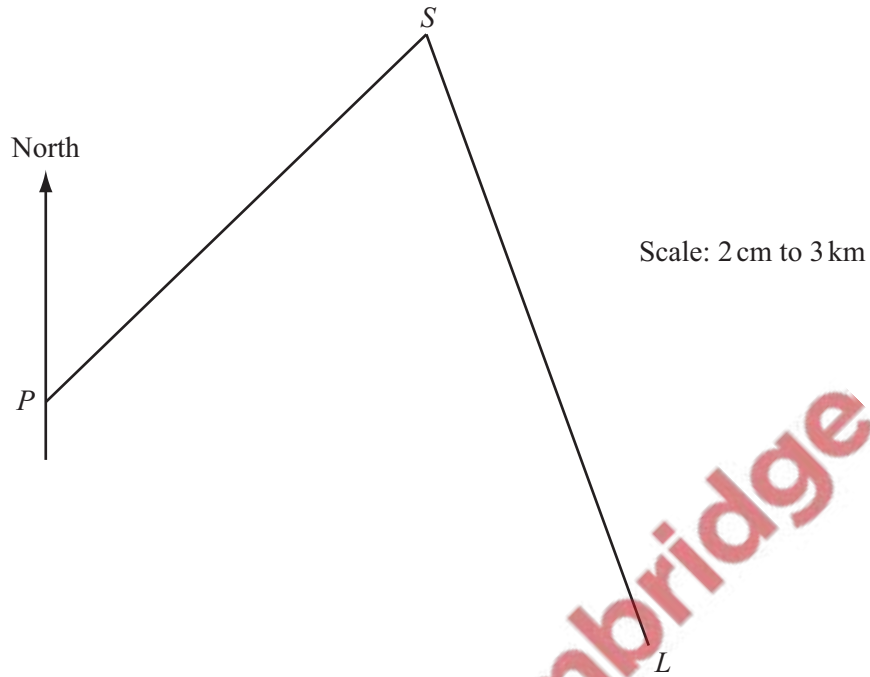
Answer(c) \$ [3]

- 3 Hans draws a plan of a field using a scale of 1 centimetre to represent 15 metres.
The actual area of the field is $10\,800\text{ m}^2$.

Calculate the area of the field on the plan.

Answer cm^2 [2]





In the scale drawing, P is a port, L is a lighthouse and S is a ship.
 The scale is 2 centimetres represents 3 kilometres.

- (a) Measure the bearing of S from P .

Answer(a) [1]

- (b) Find the actual distance of S from L .

Answer(b) km [2]

- (c) The bearing of L from S is 160° .

Calculate the bearing of S from L .

Answer(c) [1]

(d) Work out the scale of the map in the form $1:n$.

Answer(d) 1: [2]

(e) A boat B is

- equidistant from S and L
- and
- equidistant from the lines PS and SL .

On the diagram, **using a straight edge and compasses only**, construct the position of B . [5]

(f) The lighthouse stands on an island of area 1.5 cm^2 on the scale drawing.

Work out the actual area of the island.

Answer(f) km^2 [2]



5 The volume of a child's model plane is 1200 cm^3 .
The volume of the full size plane is 4050 m^3 .

Find the scale of the model in the form $1:n$.

Answer 1: [3]

- 6 (a) (i) In a camera magazine, 63 pages are used for adverts.
The ratio number of pages of adverts : number of pages of reviews = 7 : 5 .

Calculate the number of pages used for reviews.

Answer(a)(i) [2]

- (ii) In another copy of the magazine, 56 pages are used for reviews and for photographs.
The ratio number of pages of reviews : number of pages of photographs = 9 : 5 .

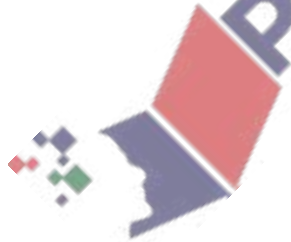
Calculate the number of pages used for photographs.

Answer(a)(ii) [2]

- (iii) One copy of the magazine costs \$4.90 .
An annual subscription costs \$48.80 for 13 copies.

Calculate the percentage discount by having an annual subscription.

Answer(a)(iii) % [3]



- (b) In a car magazine, 25% of the pages are used for selling second-hand cars, $62\frac{1}{2}\%$ of the **remaining** pages are used for features, and the other 36 pages are used for reviews.

Work out the total number of pages in the magazine.

Answer(b) [4]

- 7 Pedro and Eva do their homework.

Pedro takes 84 minutes to do his homework.

The ratio Pedro's time : Eva's time = 7 : 6.

Work out the number of minutes Eva takes to do her homework.

Answer min [2]

8 Jamie needs 300 g of flour to make 20 cakes.

How much flour does he need to make 12 cakes?

Answer g [2]

9 A model of a ship is made to a scale of 1 : 200.
The surface area of the model is 7500 cm².

Calculate the surface area of the ship, giving your answer in square metres.

Answer m² [3]

