

Ratios (inc Scales)

Question Paper 3

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Ratios (inc Scales)
Booklet	Question Paper 3

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 scale of a map is 1 : 500 000 .

- (a) The actual distance between two towns is 172 km.
Calculate the distance, in centimetres, between the towns on the map.

Answer(a) cm [2]

- (b) The area of a lake on the map is 12 cm^2 .
Calculate the actual area of the lake in km^2 .

Answer(b) km^2 [2]

2 A car company sells a scale model $\frac{1}{10}$ of the size of one of its cars.

Complete the following table.

	Scale Model	Real Car
Area of windscreen (cm^2)	135	
Volume of storage space (cm^3)		408 000

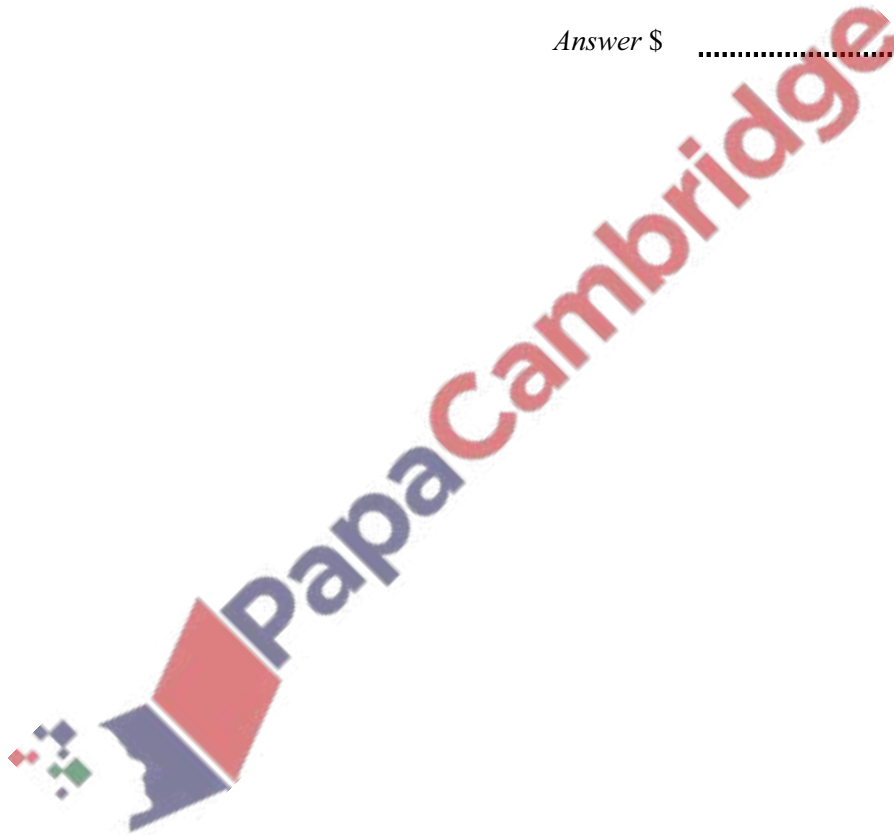
[3]

3 Martha divides \$240 between spending and saving in the ratio

$$\text{spending} : \text{saving} = 7 : 8.$$

Calculate the amount Martha has for spending.

Answer \$ [2]



- 4 (a) Abdullah and Jasmine bought a car for \$9000.
Abdullah paid 45% of the \$9000 and Jasmine paid the rest.

(i) How much did Jasmine pay towards the cost of the car?

Answer(a)(i) \$ [2]

(ii) Write down the ratio of the payments Abdullah : Jasmine in its simplest form.

Answer(a)(ii) : [1]

- (b) Last year it cost \$2256 to run the car.
Abdullah, Jasmine and their son Henri share this cost in the ratio 8 : 3 : 1.
Calculate the amount each paid to run the car.

Answer(b) Abdullah \$

Jasmine \$

Henri \$ [3]

- (c) (i) A new truck costs \$15 000 and loses 23% of its value **each year**.
Calculate the value of the truck after three years.

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

(ii) Calculate the overall percentage loss of the truck's value after three years.

Answer(c)(ii) % [3]

5 The scale on a map is 1: 20 000.

- (a) Calculate the actual distance between two points which are 2.7 cm apart on the map.
Give your answer in kilometres.

Answer(a) km [2]

- (b) A field has an area of 64 400 m².
Calculate the area of the field on the map in cm².

Answer(b) cm² [2]



6 The scale of a map is 1 : 250 000.

(a) The actual distance between two cities is 80 km.

Calculate this distance on the map. Give your answer in centimetres.

Answer(a) cm [2]

(b) On the map a large forest has an area of 6 cm².

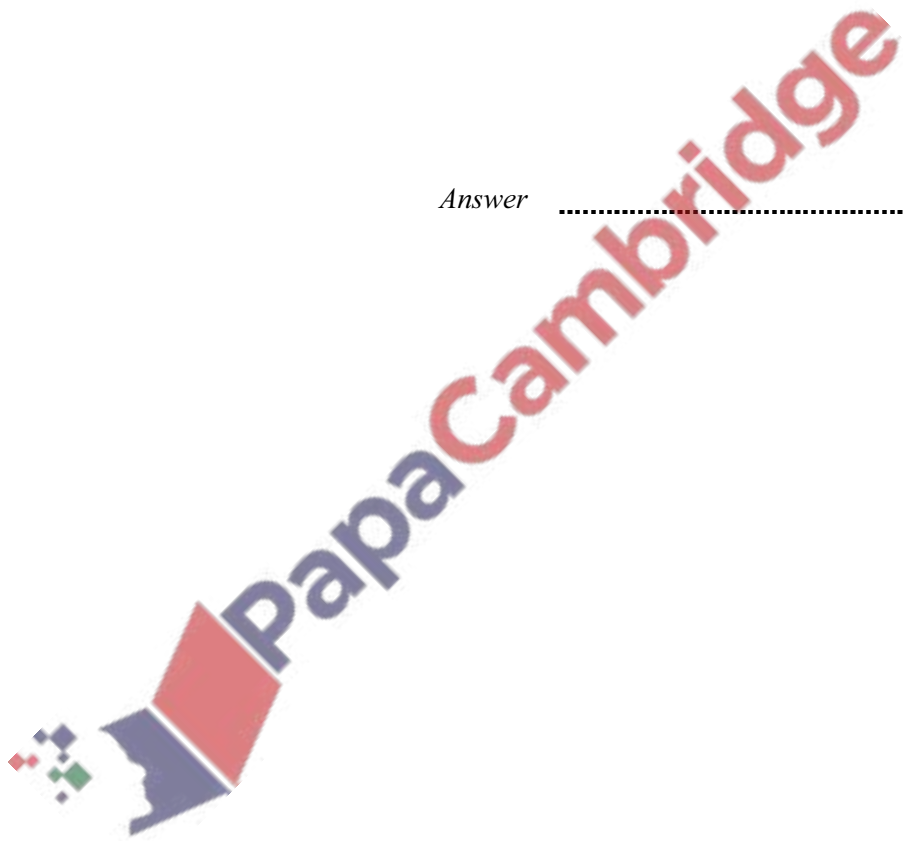
Calculate the actual area of the forest. Give your answer in square kilometres.

Answer(b) km² [2]



- 7 A model of a car is made to a scale of 1 : 40.
The volume of the model is 45 cm^3 .
Calculate the volume of the car.
Give your answer in m^3 .

Answer m^3 [3]



8 A school has 220 boys and 280 girls.

(a) Find the ratio of boys to girls, in its simplest form.

Answer(a) : [1]

(b) The ratio of students to teachers is 10 : 1.
Find the number of teachers.

Answer(b) [2]

(c) There are 21 students on the school's committee.
The ratio of boys to girls is 3 : 4.
Find the number of girls on the committee.

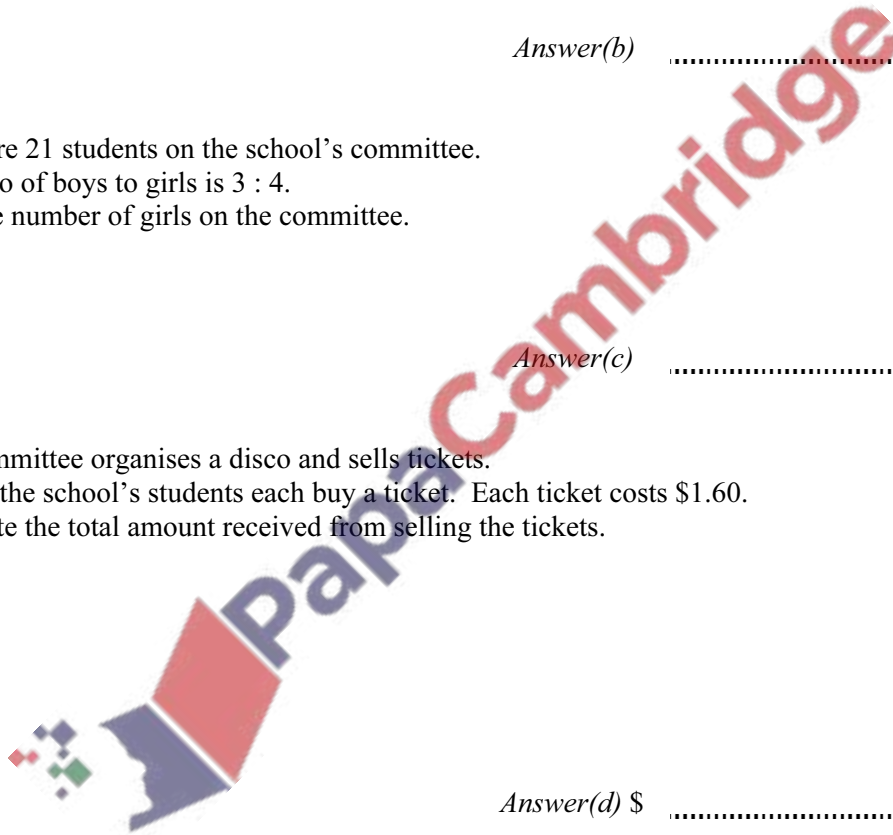
Answer(c) [2]

(d) The committee organises a disco and sells tickets.
35% of the school's students each buy a ticket. Each ticket costs \$1.60.
Calculate the total amount received from selling the tickets.

Answer(d) \$ [3]

(e) The cost of running the disco is \$264.
This is an increase of 10% on the cost of running last year's disco.
Calculate the cost of running last year's disco.

Answer(e) \$ [2]



9 Chris goes to a shop to buy meat, vegetables and fruit.

(a) (i) The costs of the meat, vegetables and fruit are in the ratio

$$\text{meat} : \text{vegetables} : \text{fruit} = 2 : 2 : 3.$$

The cost of the meat is \$2.40.

Calculate the **total** cost of the meat, vegetables and fruit.

Answer(a)(i) \$ [2]

(ii) Chris pays with a \$20 note.

What percentage of the \$20 has he spent?

Answer(a)(ii) % [2]

(b) The masses of the meat, vegetables and fruit are in the ratio

$$\text{meat} : \text{vegetables} : \text{fruit} = 1 : 8 : 3.$$

The total mass is 9 kg.

Calculate the mass of the vegetables.

Answer(b) kg [2]

(c) Calculate the cost per kilogram of the fruit.

Answer(c) \$ [3]

(d) The cost of the meat, \$2.40, is an increase of 25% on the cost the previous week.

Calculate the cost of the meat the previous week.

Answer(d) \$ [2]

