MEGA LECTURE

Ratios (inc Scales)

Question Paper 1

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Ratios (inc Scales)
Booklet	Question Paper 1

Time Allowed: **64 minutes**

Score: **/52**

Percentage: **/100**

Grade Boundaries:

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

1 A map is drawn to a scale of $1 : 1\,000\,000$.
A forest on the map has an area of $4.6\,\text{cm}^2$.

Calculate the actual area of the forest in square kilometres.

.... km^2 [2]

2 Ahmed and Babar share $240\,\text{g}$ of sweets in the ratio $7 : 3$.

Calculate the amount Ahmed receives.

Answer .... g [2]

3   A football club sells tickets at different prices dependent on age group.

   (a) **(i)**   At one game, the club sold tickets in the ratio

   under 18 : 18 to 60 : over 60 = $2 : 7 : 3$.

   There were 6100 tickets sold for people aged under 18.

   Calculate the **total** number of tickets sold for the game.

   .... [3]

   (ii)   Calculate the percentage of tickets sold for people aged under 18.

   .... % [1]

   (b)   The table shows the football ticket prices for the different age groups.

Age	Price
Under 18	$15
18 to 60	$35
Over 60	$18

   At a **different** game there were 42 600 tickets sold.

   - 14% were sold to people aged under 18
   - $\frac{2}{3}$ of the tickets were sold to people aged 18 to 60
   - The remainder were sold to people aged over 60

   Calculate the total amount the football club receives from ticket sales for this game.

   $ .... [5]

(c) In a sale, the football club shop reduced the price of the football shirts to $23.80 .
An error was made when working out this sale price.
The price was reduced by 30% instead of 20%.

Calculate the correct sale price for the football shirt.

$.. [5]

4 **(a)** Last year a golf club charged \$1650 for a family membership.
This year the cost increased by 12%.

Calculate the cost of a family membership this year.

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

(b) The golf club runs a competition.
The total prize money is shared in the ratio   1st prize : 2nd prize $= 9 : 5$.
The 1st prize is \$500 more than the 2nd prize.

   (i) Calculate the total prize money for the competition.

Answer(b)(i) \$ .... [2]

   (ii) What percentage of the total prize money is given as the 1st prize?

Answer(b)(ii) ....% [1]

(c) For the members of the golf club the ratio   men : children $= 11 : 2$.
The ratio   women : children $= 10 : 3$.

   (i) Find the ratio   men : women.

Answer(c)(i) .... : .... [2]

(ii) The golf club has 24 members who are children.

Find the total number of members.

Answer(c)(ii) .... [3]

(d) The club shop sold a box of golf balls for $20.40 .

Calculate the cost price of the golf balls.

Answer(d) $ .... [3]

5 Pip and Ali share $785 in the ratio Pip : Ali = 4 : 1.

Work out Pip's share.

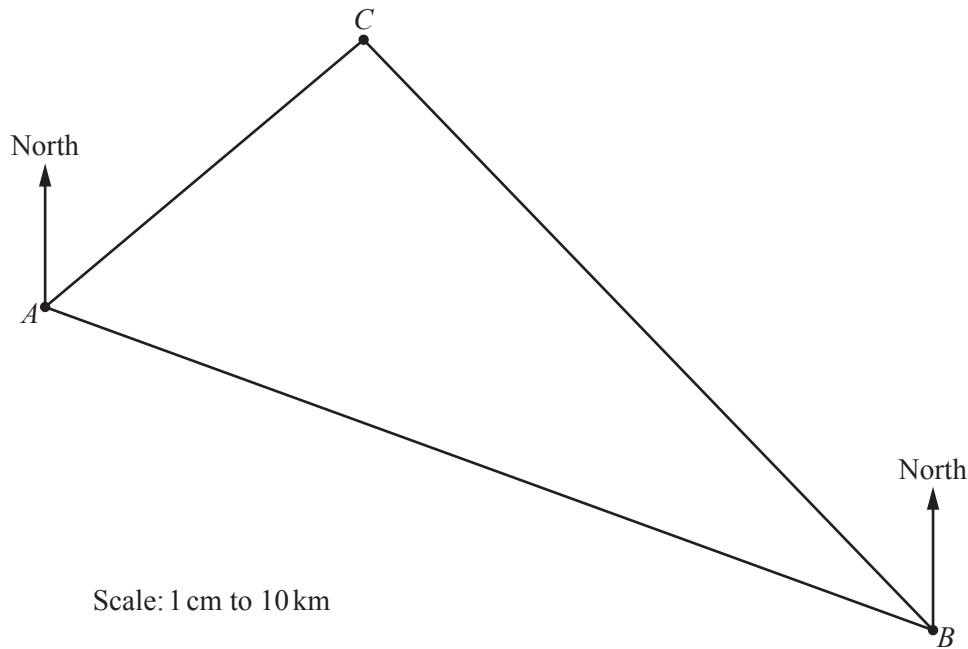*Answer* $ .... [2]

6 The scale on a map is 1 : 50 000.
The area of a field on the map is 1.2 square centimetres.

Calculate the actual area of the field in square kilometres.

Answer .... km^2 [2]

7 The scale drawing shows the positions of three towns *A*, *B* and *C* on a map.
The scale of the map is 1 centimetre represents 10 kilometres.

Scale: 1 cm to 10 km

(a) Find the actual distance *AB*.

Answer(a) .... km [1]

(b) Measure the bearing of *A* from *B*.

Answer(b) .... [1]

(c) Write the scale 1 cm to 10 km in the form $1:n$.

Answer(c) 1 : .... [1]

(d) A national park lies **inside** the triangle *ABC*.
The four boundaries of the national park are

- equidistant from *C* and *B*
- equidistant from *AC* and *CB*
- 15 km from *CB*
- along *AB*.

On the scale drawing, shade the region which represents the national park.
Leave in your construction arcs. [7]

(e) On the scale drawing, a lake inside the national park has area 0.4 cm².

Calculate the actual area of the lake.

Answer(e) .... km² [2]

8 Ahmed, Batuk and Chand share $1000 in the ratio $8:7:5$.

Calculate the amount each receives.

Answer Ahmed $ ....

Batuk $ ....

Chand $ .... [3]

9 On a mountain, the temperature decreases by 6.5 °C for every 1000 metres increase in height.
At 2000 metres the temperature is 10 °C.

Find the temperature at 6000 metres.

Answer .... °C [2]