

# Number

## Difficulty: Hard

### Question Paper 5

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Number
Paper	Paper 4
Difficulty	Hard
Booklet	Question Paper 5

**Time allowed:** 78 minutes

**Score:** /68

**Percentage:** /100

#### Grade Boundaries:

##### CIE IGCSE Maths (0580)

A*	A	B	C	D
>83%	67%	51%	41%	31%

##### CIE IGCSE Maths (0980)

9	8	7	6	5	4
>95%	87%	80%	69%	58%	46%

## Question 1

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. [2]

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

What percentage of the \$20 has he spent? [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. [2]

(c) Calculate the cost per kilogram of the fruit. [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. [2]

## Question 2

Vreni took part in a charity walk.  
She walked a distance of 20 kilometres.

(a) She raised money at a rate of \$12.50 for each kilometre.

(i) How much money did she raise by walking the 20 kilometres? [1]

(ii) The money she raised in **part (a)(i)** was  $\frac{5}{52}$  of the total money raised.  
Work out the total money raised. [2]

(iii) In the previous year the total money raised was \$2450.  
Calculate the percentage increase on the previous year's total. [2]

(b) Part of the 20 kilometres was on a road and the rest was on a footpath.  
The ratio road distance : footpath distance was 3:2.

(i) Work out the road distance. [2]

(ii) Vreni walked along the road at 3 km/h and along the footpath at 2.5 km/h.  
How long, in hours and minutes, did Vreni take to walk the 20 kilometres? [2]

(iii) Work out Vreni's average speed. [1]

(iv) Vreni started at 08 55. At what time did she finish? [1]

(c) On a map, the distance of 20 kilometres was represented by a length of 80 centimetres.  
The scale of the map was 1 :  $n$ .  
Calculate the value of  $n$ . [2]

### Question 3

(a) The scale of a map is 1:20 000 000.

On the map, the distance between Cairo and Addis Ababa is 12 cm.

(i) Calculate the distance, in kilometres, between Cairo and Addis Ababa. [2]

(ii) On the map the area of a desert region is 13 square centimetres.

Calculate the actual area of this desert region, in square kilometres. [2]

(b) (i) The actual distance between Cairo and Khartoum is 1580 km.

On a different map this distance is represented by 31.6 cm.

Calculate, in the form 1 :  $n$ , the scale of this map. [2]

(ii) A plane flies the 1580 km from Cairo to Khartoum.

It departs from Cairo at 11 55 and arrives in Khartoum at 1403.

Calculate the average speed of the plane, in kilometres per hour. [4]

## Question 4

Hassan sells fruit and vegetables at the market.

- (a) The mass of fruit and vegetables he sells is in the ratio  
fruit : vegetables = 5 : 7.

Hassan sells 1.33 **tonnes** of vegetables.

How many **kilograms** of fruit does he sell? [3]

- (b) The amount of money Hassan receives from selling fruit and vegetables is in the ratio  
fruit : vegetables = 9 : 8.

Hassan receives a **total** of \$765 from selling fruit and vegetables. [2]

Calculate how much Hassan receives from selling fruit.

- (c) Calculate the average price of Hassan's fruit, in dollars per kilogram. [2]

- (d) (i) Hassan sells oranges for \$0.35 per kilogram.

He reduces this price by 40%.

Calculate the new price per kilogram. [2]

- (ii) The price of \$0.35 per kilogram of oranges is an increase of 25% on the previous day's price.

Calculate the previous day's price. [2]

## Question 5

Fatima and Mohammed each buys a bike.

- (a) Fatima buys a city-bike which has a price of \$120.  
She pays 60 % of this price and then pays \$10 per month for 6 months.
- (i) How much does Fatima pay altogether? [2]
- (ii) Work out your answer to **part (a)(i)** as a percentage of the original price of \$120. [2]
- (b) Mohammed pays \$159.10 for a mountain-bike in a sale.  
The original price had been reduced by 14 %.  
Calculate the original price of the mountain-bike. [2]
- (c) Mohammed's height is 169 cm and Fatima's height is 156 cm.  
The frame sizes of their bikes are in the same ratio as their heights.  
The frame size of Mohammed's bike is 52 cm.  
Calculate the frame size of Fatima's bike. [2]
- (d) Fatima and Mohammed are members of a school team which takes part in a bike ride for charity.
- (i) Fatima and Mohammed ride a total distance of 36 km.  
The ratio distance Fatima rides : distance Mohammed rides is 11 : 9.  
Work out the distance Fatima rides. [2]
- (ii) The distance of 36 km is only  $\frac{2}{23}$  of the total distance the team rides.  
Calculate this total distance. [2]

## Question 6

A train starts its journey with 240 passengers.  
144 of the passengers are adults and the rest are children.

(a) Write the ratio Adults : Children in its lowest terms. [2]

(b) At the first stop,  $37\frac{1}{2}\%$  of the adults and  $\frac{1}{3}$  of the children get off the train.  
20 adults and  $x$  children get onto the train.  
The total number of passengers on the train is now 200.

(i) How many children got off the train? [1]

(ii) How many adults got off the train? [1]

(iii) How many **adult** passengers are **on** the train as it sets off again? [1]

(iv) What is the value of  $x$ ? [1]

(c) After a second stop, there are 300 passengers on the train and the ratio

Men : Women : Children is 6 : 5 : 4.

Calculate the number of children now on the train. [2]

(d) On Tuesday the train journey took 7 hours and 20 minutes and began at 13 53.

(i) At what time did the train journey end? [1]

(ii) Tuesday's time of 7 hours 20 minutes was 10% more than Monday's journey time.  
How many minutes longer was Tuesday's journey? [2]