

# Number

## Difficulty: Hard

### Question Paper 3

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Number
Paper	Paper 4
Difficulty	Hard
Booklet	Question Paper 3

**Time allowed:** 93 minutes

**Score:** /81

**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

12000 vehicles drive through a road toll on one day.  
The ratio cars:trucks:motorcycles = 13:8:3.

(a) (i) Show that 6500 cars drive through the road toll on that day. [1]

(ii) Calculate the number of trucks that drive through the road toll on that day. [1]

(b) The toll charges in 2014 are shown in the table.

Vehicle	Charge
Cars	\$2
Trucks	\$5
Motorcycles	\$1

Show that the total amount paid in tolls on that day is \$34500. [2]

- (c) This total amount is a decrease of 8% on the total amount paid on the same day in 2013.

Calculate the total amount paid on that day in 2013.

[3]

- (d) 2750 of the 6500 car drivers pay their toll using a credit card.

Write down, in its simplest terms, the fraction of car drivers who pay using a credit card.

[2]

- (e) To the nearest thousand, 90000 cars drive through the road toll in one week.

Write down the lower bound for this number of cars.

[1]

## Question 2

- (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. [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. [2]

(ii) What percentage of the total prize money is given as the 1st prize? [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. [2]

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

Find the total number of members.

[3]

(d) The club shop sold a box of golf balls for \$20.40 .  
The shop made a profit of 20% on the cost price.

Calculate the cost price of the golf balls.

[3]

### Question 3

Jaideep builds a house and sells it for \$450000.

- (a) He pays a tax of 1.5% of the selling price of the house.

Show that he pays \$6750 in tax.

[1]

- (b) \$6750 is 12.5% more than the tax Jaideep paid on the first house he built.

Calculate the tax Jaideep paid on the first house he built.

[3]

- (c) The house is built on a rectangular plot of land, 21 m by 17 m, both correct to the nearest metre.

Calculate the upper bound for the area of the plot.

[2]

- (d) On a plan of the house, the area of the kitchen is  $5.6 \text{ cm}^2$ .  
The scale of the plan is 1:200.

Calculate the actual area of the kitchen in square metres.

[2]

(e) The house was built using cuboid blocks each measuring 12 cm by 16 cm by 27 cm.

Calculate the volume of one block.

[2]

(f) Jaideep changes \$12000 into euros (€) to buy land in another country.  
The exchange rate is €1 = \$1.33 .

Calculate the number of euros Jaideep receives.  
Give your answer correct to the nearest euro.

[3]

## Question 4

(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. [3]

(ii) Find this total amount as a percentage of the \$75. [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. [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. [3]



## Question 5

There are three different areas, A, B and C, for seating in a theatre.  
The numbers of seats in each area are in the ratio  $A : B : C = 11 : 8 : 7$ .  
There are 920 seats in area B.

(a) (i) Show that there are 805 seats in area C. [1]

(ii) Write the number of seats in area B as a percentage of the total number of seats. [2]

(b) The cost of a ticket for a seat in each area of the theatre is shown in the table.

Area A	\$11.50
Area B	\$15
Area C	\$22.50

For a concert 80% of area B tickets were sold and  $\frac{3}{5}$  of area C tickets were sold.  
The total amount of money taken from ticket sales was \$35834.

Calculate the number of area A tickets that were sold. [5]

(c) The total ticket sales of \$35834 was 5% less than the ticket sales at the previous concert.

Calculate the ticket sales at the previous concert. [3]

## Question 6

Last year Mukthar earned \$18900 .  
He did not pay tax on \$5500 of his earnings.  
He paid 24% tax on his remaining earnings.

(a) (i) Calculate how much tax Mukthar paid last year. [2]

(ii) Calculate how much Mukthar earned each month after tax had been paid. [2]

(b) This year Mukthar now earns \$19750.50 .

Calculate the percentage increase from \$18900. [2]

(c) Mukthar has \$1500 to invest in one of the following ways.

- **Account A** paying **simple** interest at a rate of 4.1% per year
- **Account B** paying **compound** interest at a rate of 3.3% per year

Which account will be worth more after **3 years** and by how much? [5]

## Question 7

Noma flies from Johannesburg to Hong Kong.

Her plane leaves Johannesburg at 18 45 and arrives in Hong Kong 13 hours and 25 minutes later.

The local time in Hong Kong is 6 hours ahead of the time in Johannesburg.

(a) At what time does Noma arrive in Hong Kong? [2]

(b) Noma sleeps for part of the journey.

The time that she spends sleeping is given by the ratio

$$\text{sleeping} : \text{awake} = 3 : 4 .$$

Calculate how long Noma sleeps during the journey.

Give your answer in hours and minutes. [2]

- (c) (i) The distance from Hong Kong to Johannesburg is 10 712 km.  
The time taken for the journey is 13 hours and 25 minutes.

Calculate the average speed of the plane for this journey. [2]

- (ii) The plane uses fuel at the rate of 1 litre for every 59 metres travelled.

Calculate the number of litres of fuel used for the journey from Johannesburg to Hong Kong.  
Give your answer in standard form.

[4]

- (d) The cost of Noma's journey is 10148 South African Rand (R). This is an increase of 18% on the cost of the journey one year ago.

Calculate the cost of the same journey one year ago. [3]