

# Number

## Difficulty: Medium

### Question Paper 3

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

**Time allowed:** 102 minutes

**Score:** /89

**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

- (a) Ali and Ben receive a sum of money.  
They share it in the ratio 5 : 1.  
Ali receives \$2345.

Calculate the total amount.

[2]

- (b) Ali uses 11% of his \$2345 to buy a television.

Calculate the cost of the television.

[2]

- (c) A different television costs \$330.

- (i) Ben buys one in a sale when this cost is reduced by 15%.

How much does Ben pay?

[2]

- (ii) \$330 is 12% less than the cost last year.

Calculate the cost last year.

[3]

- (d) Ali invests \$1500 of his share in a bank account.  
The account pays compound interest at a rate of 2.3% per year.

Calculate the total amount in the account at the end of 3 years. [3]

- (e) Ali also buys a computer for \$325. He  
later sells this computer for \$250.

Calculate Ali's percentage loss. [3]

## Question 2

Anna, Bobby and Carl receive a sum of money.  
They share it in the ratio 12 : 7 : 8.  
Anna receives \$504.

(a) Calculate the **total** amount. [3]

(b) (i) Anna uses 7% of her \$504 to pay a bill.  
Calculate how much she has left. [3]

(ii) She buys a coat in a sale for \$64.68.  
This was 23% less than the original price.  
Calculate the original price of the coat. [3]

(c) Bobby uses \$250 of his share to open a bank account.  
This account pays compound interest at a rate of 1.6% per year.  
Calculate the amount in the bank account after 3 years.  
Give your answer correct to 2 decimal places. [3]

(d) Carl buys a computer for \$288 and sells it for \$324.  
Calculate his percentage profit. [3]

### Question 3

$$\mathcal{U} = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

$$E = \{x : x \text{ is an even number}\}$$

$$F = \{2, 5, 7\}$$

$$G = \{x : x^2 - 13x + 36 = 0\}$$

(a) List the elements of set  $E$ . [1]

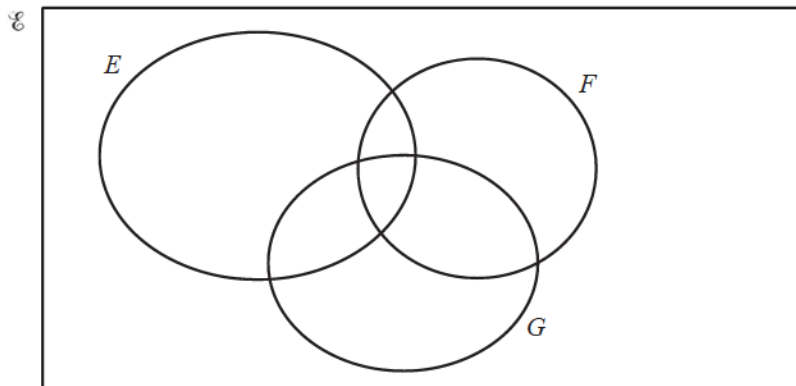
(b) Write down  $n(F)$ . [1]

(c) (i) Factorise  $x^2 - 13x + 36$ . [2]

2

(ii) Using your answer to **part (c)(i)**, solve  $x^2 - 13x + 36 = 0$  to find the two elements of  $G$ . [1]

(d) Write all the elements of  $\mathcal{U}$  in their correct place in the Venn diagram.



[2]

(e) Use set notation to complete the following statements.

(i)  $F \cap G = \dots\dots$  [1]

(ii)  $7 \dots E$  [1]

(iii)  $n(E \dots F) = 6$  [1]

## Question 4

- (a) In a sale, Jen buys a laptop for \$351.55.  
This price is 21% less than the price before the sale.

Calculate the price before the sale.

[3]

- (b) Alex invests \$4000 at a rate of 8% per year simple interest for 2 years.  
Bob invests \$4000 at a rate of 7.5% per year compound interest for 2 years.

Who receives more interest and by how much?

[6]

## Question 5

Children go to camp on holiday.

(a) Fatima buys bananas and apples for the camp.

(i) Bananas cost \$0.85 per kilogram.

Fatima buys 20kg of bananas and receives a discount of 14%.

How much does she spend on bananas? [3]

(ii) Fatima spends \$16.40 on apples after a discount of 18%.

Calculate the original price of the apples. [3]

(iii) The ratio number of bananas: number of apples = 4 : 5.

There are 108 bananas.

Calculate the number of apples. [2]

(b) The cost to hire a tent consists of two parts.

$$\boxed{\$c} + \boxed{\$d \text{ per day}}$$

The total cost for 4 days is \$27.10 and for 7 days is \$34.30.

Write down two equations in  $c$  and  $d$  and solve them.

[4]

(c) The children travel 270 km to the camp, leaving at 07 43 and arriving at 15 13.

Calculate their average speed in km/h.

[3]

(d) Two years ago \$540 was put in a savings account to pay for the holiday.

The account paid **compound** interest at a rate of 6% per year.

How much is in the account now?

[2]



## Question 6

(a) Work out the following.

(i)  $\frac{1}{0.2^2}$  [1]

(ii)  $\sqrt{5.1^2 + 4 \times 7.3^2}$  [1]

(iii)  $25^{\frac{1}{2}} \times 1000^{-\frac{2}{3}}$  [2]

(b) Mia invests \$7500 at 3.5% per year **simple** interest.  
Calculate the total amount she has after 5 years. [3]

(c) Written as the product of prime factors  $48 = 2^4 \times 3$ .

(i) Write 60 as the product of prime factors. [2]

(ii) Work out the highest common factor (HCF) of 48 and 60. [2]

(iii) Work out the lowest common multiple (LCM) of 48 and 60. [2]

## Question 7

Lucy works in a clothes shop.

(a) In one week she earned \$277.20.

(i) She spent  $\frac{1}{8}$  of this on food.

Calculate how much she spent on food. [1]

(ii) She paid 15% of the \$277.20 in taxes.

Calculate how much she paid in taxes. [2]

(iii) The \$277.20 was 5% more than Lucy earned in the previous week.

Calculate how much Lucy earned in the previous week. [3]

(b) The shop sells clothes for men, women and children.

(i) In one day Lucy sold clothes with a total value of \$2200 in the ratio

$$\text{men} : \text{women} : \text{children} = 2 : 5 : 4.$$

Calculate the value of the women's clothes she sold. [2]

(ii) The \$2200 was  $\frac{44}{73}$  of the total value of the clothes sold in the shop on this day.

Calculate the total value of the clothes sold in the shop on this day. [2]