Number
Difficulty: Hard

Question Paper 2

Level	IGCSE
Subject	Maths (0580/0980)
Exam Board	CIE
Topic	Number
Paper	Paper 4
Difficulty	Hard
Booklet	Question Paper 2

Time allowed: **104 minutes**

Score: **/90**

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%

(a) $1= 3.67 dirhams

Calculate the value, in dollars, of 200 dirhams.
Give your answer correct to 2 decimal places. [2]

(b) (i) Write as a single fraction, in its simplest form.

$$\frac{1000}{x} - \frac{1000}{x+1}$$ [3]

(ii) One day in 2014, 1 euro was worth x rand.
One year later, 1 euro was worth $(x + 1)$ rand.

Winston changed 1000 rand into euros in both years.
In 2014 he received 4.50 euros more than in 2015.

Write an equation in terms of x and show that it simplifies to

$$9x^2 + 9x - 2000 = 0.$$ [3]

(iii) Use the quadratic formula to solve the equation $9x^2 + 9x - 2000 = 0$.
Show all your working and give your answers correct to 2 decimal places. [4]

(iv) Calculate the number of euros Winston received in 2014.
Give your answer correct to 2 decimal places. [2]

(a) A jigsaw puzzle has edge pieces and inside pieces.
The ratio edge pieces : inside pieces = 3 : 22.

(i) There are 924 inside pieces.

Calculate the total number of pieces in the puzzle. [2]

(ii) Find the percentage of the total number of pieces that are edge pieces. [1]

(iii) Anjum and Betty spent a total of 9 hours completing the puzzle.
The ratio Anjum's time : Betty's time = 7 : 5.

Work out how much time Anjum spent on the puzzle. [2]

(b) The price of the puzzle was $15.99 in a sale.
This was 35% less than the original price.

Calculate the original price of the puzzle. [3]

(c) Betty takes a photograph of the completed puzzle.
The photograph and the completed puzzle are mathematically similar.

The area of the photograph is 875 cm^2 and the area of the puzzle is 2835 cm^2.
The length of the photograph is 35 cm.

Work out the length of the puzzle. [3]

(d) (i) The area of another puzzle is 6610 cm^2.

Change 6610 cm^2 into m^2. [1]

(ii) The cost price of this puzzle is $12.50 .
The selling price is $18.50 .

Calculate the percentage profit. [3]

(a) Kristian and Stephanie share some money in the ratio 3 : 2.
Kristian receives $72.

(i) Work out how much Stephanie receives. [2]

(ii) Kristian spends 45% of his $72 on a computer game.

Calculate the price of the computer game. [1]

(iii) Kristian also buys a meal for $8.40 .

Calculate the fraction of the $72 Kristian has left after buying the computer game and the meal.
Give your answer in its lowest terms. [2]

(iv) Stephanie buys a book in a sale for $19.20 .
This sale price is after a reduction of 20%.

Calculate the original price of the book. [3]

(b) Boris invests $550 at a rate of 2% per year simple interest.

Calculate the amount Boris has after 10 years. [3]

(c) Marlene invests $550 at a rate of 1.9% per year compound interest.

Calculate the amount Marlene has after 10 years. [2]

(d) Hans invests $550 at a rate of x% per year compound interest.
At the end of 10 years he has a total amount of $638.30, correct to the nearest cent.

Find the value of x. [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]

Aasha, Biren and Cemal share $640 in the ratio 8 : 15 : 9.

(a) Show that Aasha receives $160. [1]

(b) Calculate the amount that Biren and Cemal receive. [2]

(c) Aasha uses her $160 to buy some books.
Each book costs $15.25 .

Find the greatest number of books that she can buy. [2]

(d) Biren spends $\frac{3}{8}$ of his share on clothes and $\frac{1}{3}$ of his share on a computer.

Find the fraction of his share that he has left.
Write your fraction in its lowest terms. [3]

(a) Meena sells her car for $6000.
This is a loss of 4% on the price she paid.

Calculate the price Meena paid for the car. [3]

(b) Eisha changes some euros (€) into dollars ($) when the exchange rate is €1 = $1.351 .
She receives $6000.

Calculate how many euros Eisha changes.
Give your answer correct to the nearest euro. [3]

(c) Meena and Eisha both invest their $6000.
Meena invests her $6000 at a rate of 1.5% per year compound interest.
Eisha invests her $6000 in a bank that pays simple interest.
After 8 years, their investments are worth the same amount.

Calculate the rate of simple interest per year that Eisha received. [5]

A film company uses 512 actors in a film.
The actors are in the ratio men : women : children = 7 : 11 : 14.

(a) (i) Show that there are 224 children in the film. [2]

(ii) Find the number of men in the film. [1]

(b) Every working day, each child is given $1 to spend.
Each child works for 45 days.

Calculate the total amount that the film company gives the children to spend.
Give your answer correct to the nearest $100. [2]

(c) The children have lessons every day in groups of no more than 12.

Calculate the smallest possible number of groups. [2]

(d) The film costs four million and ninety three thousand dollars to make.

(i) Write this number in figures. [1]

(ii) Write your answer to **part (d)(i)** in standard form. [1]

(e) A DVD copy of the film costs $2.75 to make.
The selling price is $8.20 .

Calculate the percentage profit. [3]