

Number

Difficulty: Medium

Question Paper 2

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

Time allowed: 93 minutes

Score: /81

Percentage: /100

Grade Boundaries:

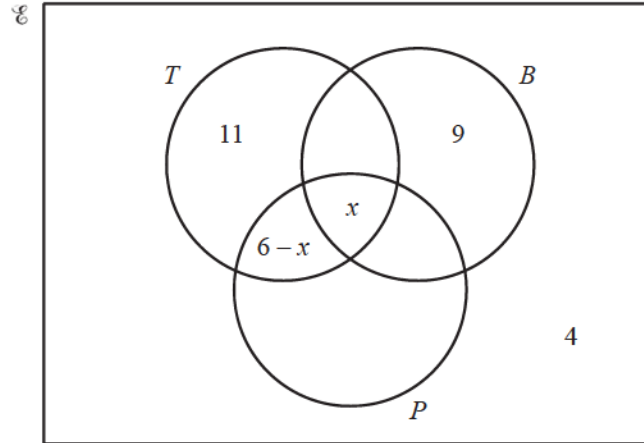
CIE IGCSE Maths (0580)

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



In the Venn diagram, $\mathcal{E} = \{\text{children in a nursery}\}$

$B = \{\text{children who received a book for their birthday}\}$

$T = \{\text{children who received a toy for their birthday}\}$

$P = \{\text{children who received a puzzle for their birthday}\}$

x children received a book and a toy and a puzzle.

6 children received a toy and a puzzle.

- (a) 4 children received a book and a toy.
5 children received a book and a puzzle.
7 children received a puzzle but not a book and not a toy.

Complete the Venn diagram above.

[3]

- (b) There are 40 children in the nursery.

Using the Venn diagram, write down and solve an equation in x .

[3]

(c) Work out

(i) the probability that a child, chosen at random, received a book but not a toy and not a puzzle, [1]

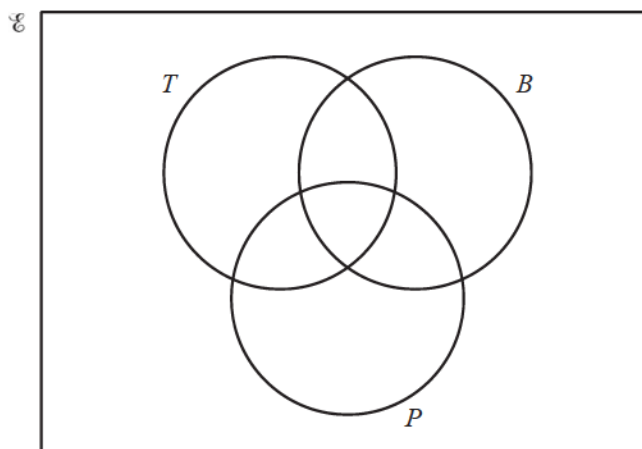
(ii) the number of children who received a book and a puzzle but not a toy, [1]

(iii) $n(B)$, [1]

(iv) $n(B \cup P)$, [1]

(v) $n(B \cup T \cup P)'$. [1]

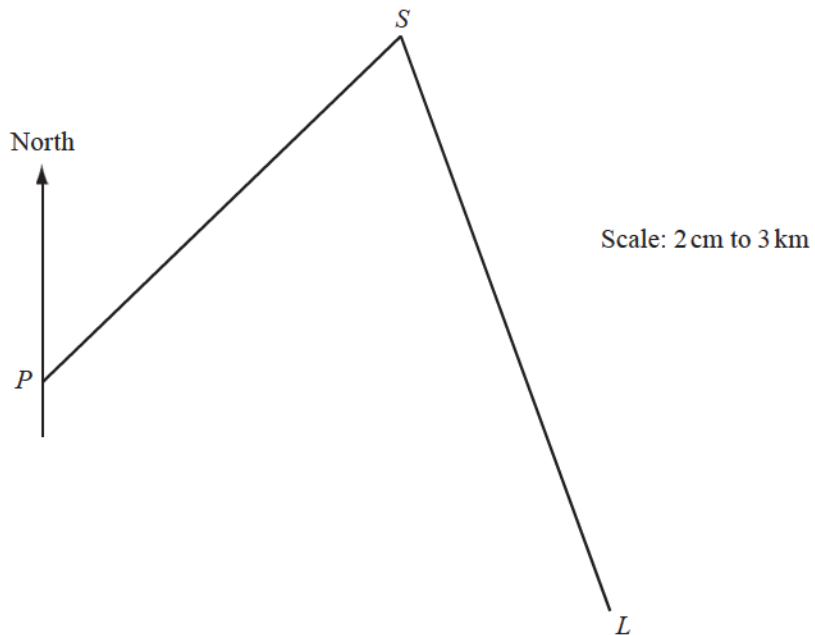
(d)



Shade the region $B \cap (T \cup P)'$.

[1]

Question 2



In the scale drawing, P is a port, L is a lighthouse and S is a ship.
The scale is 2 centimetres represents 3 kilometres.

(a) Measure the bearing of S from P . [1]

(b) Find the actual distance of S from L . [2]

(c) The bearing of L from S is 160° .

Calculate the bearing of S from L . [1]

(d) Work out the scale of the map in the form $1 : n$. [2]

(e) The lighthouse stands on an island of area 1.5 cm^2 on the scale drawing.

Work out the actual area of the island. [2]

Question 3

Jane and Kate share \$240 in the ratio 5 : 7 .

(a) Show that Kate receives \$140. [2]

(b) Jane and Kate each spend \$20.

Find the new ratio Jane's remaining money : Kate's remaining money.
Give your answer in its simplest form. [2]

(c) Kate invests \$120 for 5 years at 4% per year simple interest.

Calculate the total amount Kate has after 5 years. [3]

(d) Jane invests \$80 for 3 years at 4% per year compound interest.

Calculate the total amount Jane has after 3 years.
Give your answer correct to the nearest cent. [3]

(e) An investment of \$200 for 2 years at 4% per year compound interest is the same as an investment of \$200 for 2 years at r % per year simple interest.

Find the value of r . [3]

Question 4

In July, a supermarket sold 45 981 bottles of fruit juice.

- (a) The cost of a bottle of fruit juice was \$1.35 .

Calculate the amount received from the sale of the 45981 bottles.
Give your answer correct to the nearest hundred dollars.

[2]

- (b) The number of bottles sold in July was 17% more than the number sold in January.

Calculate the number of bottles sold in January.

[3]

- (c) There were 3 different flavours of fruit juice.

The number of bottles sold in each flavour was in the ratio apple: orange : cherry = 3 : 4 : 2.
The total number of bottles sold was 45 981.

Calculate the number of bottles of orange juice sold.

[2]

- (d) One bottle contains 1.5 litres of fruit juice.

Calculate the number of 330 ml glasses that can be filled completely from one bottle.

[3]

- (e) $\frac{5}{9}$ of the 45981 bottles are recycled.

Calculate the number of bottles that are recycled.

[2]

Question 5

David sells fruit at the market.

(a) In one week, David sells 120 kg of tomatoes and 80 kg of grapes.

(i) Write 80 kg as a fraction of the total mass of tomatoes and grapes.

Give your answer in its lowest terms.

[1]

(ii) Write down the ratio mass of tomatoes:mass of grapes.

Give your answer in its simplest form.

[1]

(b) (i) One day he sells 28 kg of oranges at \$1.56 per kilogram.

He also sells 35 kg of apples.

The total he receives from selling the oranges and the apples is \$86.38 .

Calculate the price of 1 kilogram of apples.

[2]

(ii) The price of 1 kilogram of oranges is \$1.56 .

This is 20% more than the price two weeks ago.

Calculate the price two weeks ago.

[3]

(c) On another day, David received a total of \$667 from all the fruit he sold.

The cost of the fruit was \$314.20 .

David worked for $10\frac{1}{2}$ hours on this day.

Calculate David's rate of profit in dollars per hour.

[2]

Question 6

- (a) One day, Maria took 27 minutes to walk 1.8 km to school.
She left home at 07:48.
- (i) Write down the time Maria arrived at school. [1]
- (ii) Show that Maria's average walking speed was 4 km/h. [2]
- (b) Another day, Maria cycled the 1.8 km to school at an average speed of 15 km/h.
- (i) Calculate the percentage **increase** that 15 km/h is on Maria's walking speed of 4 km/h. [3]
- (ii) Calculate the percentage **decrease** that Maria's cycling time is on her walking time of 27 minutes. [3]
- (iii) After school, Maria cycled to her friend's home.
This took 9 minutes, which was 36% of the time Maria takes to walk to her friend's home.
Calculate the time Maria takes to walk to her friend's home. [2]

Question 7

A tennis club has 560 members.

(a) The ratio men : women : children = 5 : 6 : 3.

(i) Show that the club has 240 women members. [2]

(ii) How many members are children? [1]

(b) $\frac{5}{8}$ of the 240 women members play in a tournament.

How many women members do **not** play in the tournament? [2]

(c) The annual membership fee in 2013 is \$198 for each adult and \$75 for each child.

(i) Calculate the total amount the 560 members pay in 2013. [2]

(ii) The adult fee of \$198 in 2013 is 5.6% more than the fee in 2012.

Calculate the adult fee in 2012. [3]

(d) The club buys 36 tennis balls for \$9.50 and sells them to members for \$0.75 each.

Calculate the percentage profit the club makes.

[3]

(e) A tennis court is a rectangle with length 23.7 m and width 10.9 m, each correct to 1 decimal place.

Calculate the upper and lower bounds of the perimeter of the court.

[3]