

Conversion - Percentages, Fractions & Decimals

Question Paper 3

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Number
Sub-Topic	Conversion - Percentages, Fractions & Decimals
Booklet	Question Paper 3

Time Allowed: 45 minutes

Score: /37

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

- 1 Distances from the Sun can be measured in astronomical units, AU.
 Earth is a distance of 1 AU from the Sun.
 One AU is approximately 1.496×10^8 km.

The table shows distances from the Sun.

Name	Distance from the Sun in AU	Distance from the Sun in kilometres
Earth	1	1.496×10^8
Mercury	
Jupiter	7.79×10^8
Pluto	5.91×10^9

(a) Complete the table. [3]

(b) Light travels at approximately 300 000 kilometres per second.

- (i) How long does it take light to travel from the Sun to Earth?
 Give your answer in seconds.

Answer(b)(i) s [2]

- (ii) How long does it take light to travel from the Sun to Pluto?
 Give your answer in minutes.

Answer(b)(ii) min [2]

(c) One light year is the distance that light travels in one year (365 days).

How far is one light year in kilometres?
 Give your answer in standard form.

Answer(c) km [3]

(d) How many astronomical units (AU) are equal to one light year?

Answer(d) AU [2]

- 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]

- 3 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]