

Percentages Ratio Proportion Time 2 Mixed

1)

- (a) Abdullah and Jasmine bought a car for \$9000.
Abdullah paid 45% of the \$9000 and Jasmine paid the rest.

(i) How much did Jasmine pay towards the cost of the car?

Answer(a)(i) \$ [2]

(ii) Write down the ratio of the payments Abdullah : Jasmine in its simplest form.

Answer(a)(ii) : [1]

- (b) Last year it cost \$2256 to run the car.
Abdullah, Jasmine and their son Henri share this cost in the ratio 8 : 3 : 1.
Calculate the amount each paid to run the car.

Answer(b) Abdullah \$

Jasmine \$

Henri \$ [3]

- (c) (i) A new truck costs \$15 000 and loses 23% of its value **each year**.
Calculate the value of the truck after three years.

Answer(c)(i) \$ [3]

(ii) Calculate the overall percentage loss of the truck's value after three years.

Answer(c)(ii) % [3]

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2)

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?

Answer(a)(i) \$

[3]

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

Calculate the original price of the apples.

Answer(a)(ii) \$

[3]

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

There are 108 bananas.

Calculate the number of apples.

Answer(a)(iii)

[2]

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- (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.

Answer(b) $c =$

$d =$ [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.

Answer(c) km/h [3]

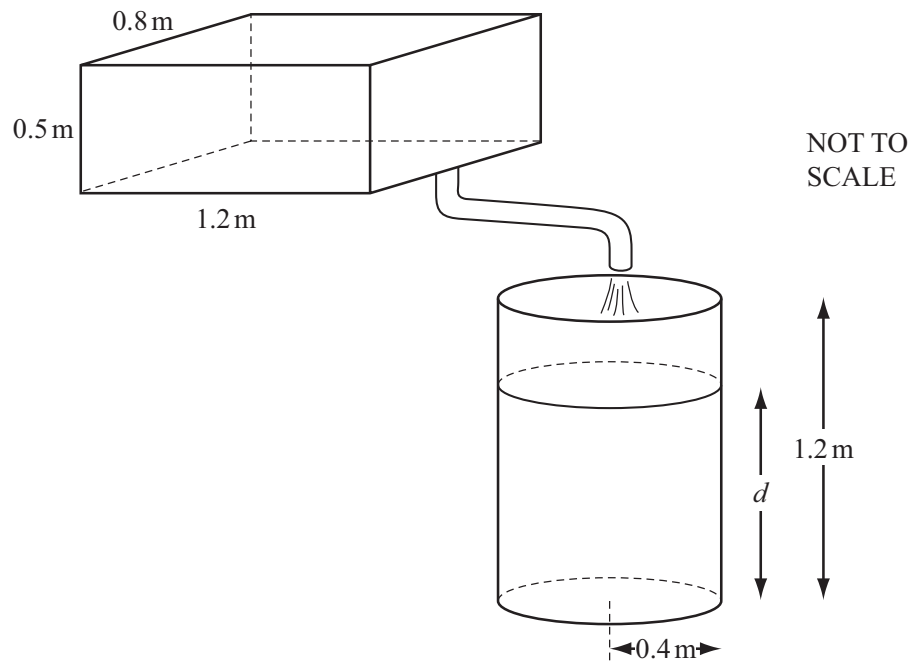
- (d) Two years ago \$540 was put in a savings account to pay for the holiday.

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

How much is in the account now?

Answer(d) \$ [2]

3)



A rectangular tank measures 1.2 m by 0.8 m by 0.5 m.

(a) Water flows from the full tank into a cylinder at a rate of $0.3 \text{ m}^3/\text{min}$.

Calculate the time it takes for the full tank to empty.
Give your answer in minutes and seconds.

Answer(a) , min , s [3]

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4)

- (c) Caroline arrived at the shop at 09 48.
She was in the shop for 18 minutes.
She then took 5 minutes to walk to a café.
She was in the café for 20 minutes.

- (i) At what time did Caroline leave the café?

Answer(c)(i)

[2]

- (ii) Caroline then went to the library.
She was in the library for 45 minutes.

Work out the ratio

time in the shop : time in the library.

Give your answer in its simplest form.

Answer(c)(ii)

:

[2]

- (d) When Caroline left home she had \$36.50.
She returned home with \$12.74.

Calculate \$12.74 as a percentage of \$36.50.

Answer(d)

% [1]

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- 5) The ferry from Helsinki to Travemunde leaves Helsinki at 17 30 on a Tuesday.
The journey takes 28 hours 45 minutes.

Work out the day and time that the ferry arrives in Travemunde.

Answer Day Time [2]

- 6) The taxi fare in a city is \$3 **and** then \$0.40 for every kilometre travelled.

- (a) A taxi fare is \$9.

How far has the taxi travelled?

Answer(a) , km [2]

- (b) Taxi fares cost 30 % more at night.

How much does a \$9 daytime journey cost at night?

Answer(b) \$ [2]

- 7) During her holiday, Hannah rents a bike.
She pays a fixed cost of \$8 and then a cost of \$4.50 per day.
Hannah pays with a \$50 note and receives \$10.50 change.

Calculate for how many days Hannah rents the bike.

Answer , days [3]

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- 8) 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.

Answer(a) \$ [3]

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

Answer(b)(i) \$ [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.

Answer(b)(ii) \$ [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.

Answer(c) \$ [3]

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

Answer(d) % [3]

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9) A train travels from Paris to Milan.

(a) The train departs from Paris at 20 28 and the journey takes 9 hours 10 minutes.

(i) Find the time the train arrives in Milan.

Answer(a)(i)

[1]

(ii) The distance between Paris and Milan is 850 km.

Calculate the average speed of the train.

Answer(a)(ii)

km/h [2]

(b) The total number of passengers on the train is 640.

- (i) 160 passengers have tickets which cost \$255 each.
- 330 passengers have tickets which cost \$190 each.
- 150 passengers have tickets which cost \$180 each.

Calculate the mean cost of a ticket.

Answer(b)(i) \$

[3]

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continued

- (ii) There are men, women and children on the train in the ratio

$$\text{men : women : children} = 4 : 3 : 1.$$

Show that the number of women on the train is 240.

Answer(b)(ii)

[2]

- (iii) 240 is an increase of 60% on the number of women on the train the previous day.

Calculate the number of women on the train the previous day.

Answer(b)(iii)

[3]

- (c) The length of the train is 210 m.

It passes through a station of length 340 m, at a speed of 180 km/h.

Calculate the number of seconds the train takes to pass completely through the station.

Answer(c)

s [3]

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10)

(a) The minimum temperatures at Beijing Airport, for five days, are given in this table.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Temperature (°C)	−3	5	−1	2	−4

(i) Write down the lowest temperature.

Answer(a)(i) , °C [1]

(ii) Write these temperatures in order, starting with the lowest.

Answer(a)(ii) < < < < [1]

(iii) What is the difference between the temperatures on Monday and Tuesday?

Answer(a)(iii) °C [1]

(b) The table shows part of the timetable for flights from Beijing to Hong Kong.

Beijing	07 45	08 00	09 30
Hong Kong	11 20	11 40	13 05

(i) At what time does the first plane after midday arrive in Hong Kong?

Answer(b)(i) [1]

(ii) How long, in hours and minutes, does the 07 45 flight from Beijing to Hong Kong take?

Answer(b)(ii) h min [1]

(c) A plane travels 1708 km in 3.5 hours.

Work out the average speed of the plane.
Give the units of your answer.

Answer(c) [2]

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11)

A shop is open during the following hours.

	Monday to Friday	Saturday	Sunday
Opening time	06 45	07 30	08 45
Closing time	17 30	17 30	12 00

(a) Write the closing time on Saturday in the 12-hour clock time.

Answer(a)

[1]

(b) Calculate the total number of hours the shop is open in one week.

Answer(b)

h [2]

Percentages Ratio Proportion Time 2 Mixed

12)

- (a) The Martinez family travels by car to Seatown.
The distance is 92 km and the journey takes 1 hour 25 minutes.

- (i) The family leaves home at 07 50.
Write down the time they arrive at Seatown.

Answer(a)(i) [1]

- (ii) Calculate the average speed for the journey.

Answer(a)(ii) km/h [2]

- (iii) During the journey, the family stops for 10 minutes.

Calculate 10 minutes as a percentage of 1 hour 25 minutes.

Answer(a)(iii) , % [1]

- (iv) 92 km is 15% more than the distance from Seatown to Deecity.

Calculate the distance from Seatown to Deecity.

Answer(a)(iv) km [3]

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- (b) The Martinez family spends \$150 in the ratio

fuel : meals : gifts = 11 : 16 : 3 .

- (i) Show that \$15 is spent on gifts.

Answer (b)(i)

[2]

- (ii) The family buys two gifts.
The first gift costs \$8.25.

Find the ratio

cost of first gift : cost of second gift.

Give your answer in its simplest form.

Answer(b)(ii) : [2]