

# GCSE Edexcel Math

1MA1 Basic Percentages

**Answers** 

"We will help you to achieve A Star"



Bill's weight decreases from 64.8 kg to 59.3 kg.

Calculate the percentage decrease in Bill's weight. Give your answer correct to 3 significant figures.



Sasha takes a music exam.

The table shows the result that Sasha can get for different percentages in her music exam.

Percentage	Result
50% - 69%	Pass
70% - 84%	Merit
85% - 100%	Distinction

Sasha gets 62 out of 80 in her music exam.

What result does Sasha get? You must show your working.

PERCENTAGE = 
$$\frac{62}{80} \times 100$$
  
=  $77.5\%$   
 $\longrightarrow$  MERIT.



Karen got 32 out of 80 in a maths test.

She got 38% in an English test.

Karen wants to know if she got a higher percentage in maths or in English.

Did Karen get a higher percentage in maths or in English?



Tom is a ski jumper.

The maximum length of skis he can use is 145% of his height. Tom's height is 1.80 m.

Work out the maximum length of skis Tom can use.

TO INCREASE 1.8 BY 45%.

WE MULTIPLY BY 145 on 1-45

THINK: WE WANT 103%. SO WE MULTIPLY BY 103 (=1.03)

MAX LENGTH = 1.8 × 1.65 = 2.61 m



At time t = 0 hours a tank is full of water.

Water leaks from the tank.

At the end of every hour there is 2% less water in the tank than at the start of the hour.

The volume of water, in litres, in the tank at time t hours is  $V_t$ 

Given that

$$V_0 = 2000 V_{t+1} = kV_t$$

write down the value of k.



Mr Mason asks 240 Year 11 students what they want to do next year.

15% of the students want to go to college.  $\frac{3}{4}$  of the students want to stay at school.  $\frac{3}{4}$  of the students want to stay at school.

The rest of the students do not know.

Work out the number of students who do not know.

90% KNOW

So 10%, DO NOT KNOW.

 $107.0 + 240 18 \frac{24}{100}$   $\left(\frac{10}{100} \times 240 = 24\right)$ 



Ria is going to buy a caravan.

The total cost of the caravan is £7000 plus VAT at 20%.

Ria pays a deposit of £3000

She pays the rest of the total cost in 6 equal monthly payments.

Work out the amount of each monthly payment.

TOTAL COST = 7000 + 20%.

7000

10% = 700

207. - 1400

= 7000 + 1400

= {8400

LESS DEPOSIT = 8400 - 3000

= 15400

MONTHLY PAYMENT = 5400

= £900

6×9 = 54

6×900 = 5400



Celina and Zoe both sing in a band.

One evening the band plays for 80 minutes. Celina sings for 65% of the 80 minutes.

Zoe sings for  $\frac{5}{8}$  of the 80 minutes.

Celina sings for more minutes than Zoe sings.

Work out for how many more minutes. You must show all your working.

CELINA: 
$$65\%$$
, of 80

=  $\frac{65}{160} \times 80$ 

=  $\frac{52}{160} \times 80$ 

=  $\frac{5}{8} \times 80$ 



George wants to watch all 23 games that a football team will play at home next season.

He can buy

a season ticket costing £425

or 23 separate tickets costing £24 each ticket.

What percentage of the total cost of 23 separate tickets does George save by buying a season ticket?

GEORGE SAVES = 
$$23 \times 24 - 425$$
  
=  $\frac{127}{23 \times 24}$   
=  $\frac{127}{23 \times 24}$   
=  $\frac{23}{3}$ 



Emily buys a pack of 12 bottles of water.

The pack costs £5.64

7 40.50

Emily sells all 12 bottles for 50p each.

Work out Emily's percentage profit.

Give your answer correct to 1 decimal place.



Railtickets and Cheaptrains are two websites selling train tickets.

Each of the websites adds a credit card charge and a booking fee to the ticket price.

#### Railtickets

Credit card charge: 2.25% of ticket price

Booking fee: 80 pence

# Cheaptrains

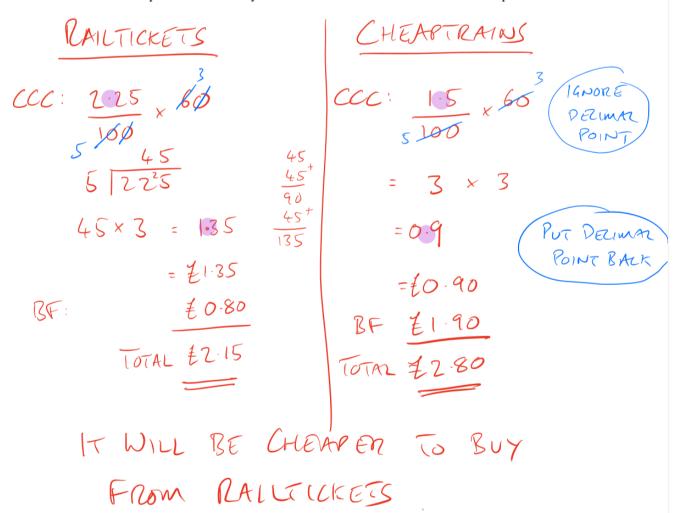
Credit card charge: 1.5% of ticket price

Booking fee: £1.90

Nadia wants to buy a train ticket. The ticket price is £60 on each website.

Nadia will pay by credit card.

Will it be cheaper for Nadia to buy the train ticket from Railtickets or from Cheaptrains?





Greg sells car insurance and home insurance.

The table shows the cost of these insurances.

Insurance	car insurance	home insurance
Cost	£200	£350

Each month Greg earns

£530 basic pay

5% of the cost of all the car insurance he sells
10% of the cost of all the home insurance he sells

In May Greg sold

6 car insurances

and 4 home insurances

Work out the total amount of money Greg earned in May.

CAR INSURANCE: 
$$57.0 + 200$$

$$= \frac{5}{100} \times 200$$

$$= 5 \times 2 = £10$$
Home Insurance =  $107.0 + 350$ 

$$= \frac{10}{100} \times 350$$

$$= \frac{350}{100} = £35$$

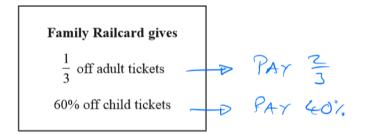
$$= \frac{350}{100} = \frac{350}{100} =$$



Mr Brown and his 2 children are going to London by train.

An adult ticket costs £24 A child ticket costs £12

Mr Brown has a Family Railcard.



Work out the total cost of the tickets when Mr Brown uses his Family Railcard.

TOTAL COST = 
$$A \times \frac{2}{3} + 2 \times C \times \frac{40}{100} = \frac{8}{100} = \frac{8}{2} \times \frac{2}{3} + \frac{48}{5} = \frac{2 \times 48}{10} = \frac{2 \times 48}{10} = \frac{2 \times 48}{10} = \frac{2 \times 4.8}{10} = \frac$$



Sean wants to go on holiday.

He is going to get a loan of £720 to help pay for the holiday.

Sean will have to pay back the £720 plus interest of 15%. He will pay this back in 12 equal monthly installments.

How much money will Sean pay back each month?

$$100\% = 720$$
 $10\% = 72$ 
 $5\% = 36$ 
 $5\% = 36$ 
 $= 828$ 
 $= 828$ 
 $= 12$ 
 $= 2x414$ 
 $= 2x6$ 
 $= 2x3$ 
 $= 469$ 



Bill buys and sells laptops.

Last month Bill bought 50 laptops. He paid £400 for each laptop.

He sold

40 of these laptops at a profit of 30% on each laptop 10 of these laptops at a profit of 15% on each laptop

Bill's target last month was to sell all 50 laptops for a total of at least £25 000

Did Bill reach this target?