



# EXAM PAPERS PRACTICE

GCSE OCR Math J560

Basic Percentage

Answers

*"We will help you to  
achieve A Star "*



### Answer 1

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.

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.

10% OF 240 IS 24

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

15% }  
75% } 15% + 75% = 90%

### Answer 2

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.

7000

10% = 700

20% = 1400

TOTAL COST = 7000 + 20%

= 7000 + 1400

= £8400

LESS DEPOSIT = 8400 - 3000

= £5400

MONTHLY PAYMENT =  $\frac{5400}{6}$

= £900

6 x 9 = 54

6 x 900 = 5400



### Answer 3

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.

$$\begin{aligned} \text{CELINA: } & 65\% \text{ of } 80 \\ & = \frac{65}{100} \times 80 \\ & = \underline{\underline{52 \text{ mins}}} \end{aligned}$$

$$\begin{aligned} \text{ZOE: } & \frac{5}{8} \text{ of } 80 \\ & = \frac{5}{8} \times 80 \\ & = \underline{\underline{50 \text{ mins}}} \end{aligned}$$

$$C - Z = 52 - 50 = \underline{\underline{2 \text{ MINUTES}}}$$

### Answer 4

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?

$$\begin{aligned} \text{GEORGE SAVES} & = 23 \times 24 - 425 \\ & = \pounds 127. \end{aligned}$$

$$\begin{aligned} \% \text{ SAVING} & = \frac{127}{23 \times 24} \times 100 \\ & = \underline{\underline{23\%}} \end{aligned}$$



**Answer 5**

Emily buys a pack of 12 bottles of water.  
The pack costs £5.64

Emily sells all 12 bottles for 50p each.  $\rightarrow$  £0.50

Work out Emily's percentage profit.  
Give your answer correct to 1 decimal place.

$$\begin{aligned}\text{Profit} &= \text{SELLING PRICE} - \text{COST PRICE} \\ &= 12 \times 0.50 - 5.64 \\ &= \underline{\underline{0.36}}\end{aligned}$$

$$\begin{aligned}\% \text{ Profit} &= \frac{\text{ACTUAL PROFIT}}{\text{COST PRICE}} \times 100 \\ &= \frac{0.36}{5.64} \times 100 \\ &= 6.38297... \% \\ &\quad \downarrow \begin{array}{l} \geq 5 \\ \text{Round Up} \end{array} \\ &= \underline{\underline{6.4\%}}\end{aligned}$$

**Answer 6**

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.

$$\text{PERCENTAGE CHANGE} = \frac{\text{ACTUAL CHANGE}}{\text{ORIGINAL VALUE}} \times 100$$

$$\begin{aligned}\text{PERCENTAGE DECREASE} &= \frac{64.8 - 59.3}{64.8} \times 100 \\ &= \underline{\underline{8.49\%}}\end{aligned}$$



**Answer 7**

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.

$$\begin{aligned} \text{PERCENTAGE} &= \frac{62}{80} \times 100 \\ &= \underline{77.5\%} \end{aligned}$$

→ MERIT

**Answer 8**

A company sells boxes to factories.  
Fred buys boxes.  
The boxes are sold in packs of 1000  
Each pack costs £193.86

Fred orders 3 packs of boxes.  
He gets a discount on his total order.

The table shows the discount he will get.

Total Order	Discount
£100 - £300	5%
£301 - £400	10%
£401 and above	15%

Work out the total cost of the order after the discount.  
You must show your working.

$$\begin{aligned} \text{COST} &= 3 \times 193.86 \\ &= \underline{\underline{£581.58}} \end{aligned}$$

100-15  
↓

15% DISCOUNT IS "PAY 85% OF COST"

$$\begin{aligned} \text{PAY} &= \frac{85}{100} \times 581.58 \\ &= \underline{\underline{£494.34}} \end{aligned}$$



Answer 9

Mr Watkins needs to buy some oil for his central heating.

Mr Watkins can put up to 1500 litres of oil in his oil tank.

There are already 850 litres of oil in the tank.

Mr Watkins is going to fill the tank with oil.

The price of oil is 67.2p per litre.

Mr Watkins gets 5% off the price of the oil.

How much does Mr Watkins pay for the oil he needs to buy?

NEEDS TO BUY = 1500 - 850 = 650 LITRES

FULL PRICE = 650 x 67.2 = 43680 pence = £436.80

PERCENTAGE DECREASES (THE BEST WAY!) TO DECREASE BY, SAY, 3%. 5%. THINK: WE WANT 97%. SO WE 95%. MULTIPLY BY 97/100 (=0.97) 95/100 = 0.95

REDUCED PRICE = 436.80 x 0.95 = £414.96

Answer 10

The table gives some information about student attendance at a school on Friday.

Table with 4 columns: Year, Present, Absent, Total. Rows for Year 7 to Year 11. Includes handwritten red annotations for totals and percentages.

The school has a target of 94% of students being present each day.

Did the school meet its target on Friday?

NEED TO FIND PRESENT / TOTAL x 100

PERCENTAGE PRESENT = 1092 / 1210 x 100 = 90.2479... %

SINCE 90.2% < 94%. THE SCHOOL DID NOT MEET ITS TARGET ON FRIDAY



## EXAM PAPERS PRACTICE

### Answer 11

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  
and 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.

$$\begin{aligned}\text{CAR INSURANCE: } & 5\% \text{ of } 200 \\ & = \frac{5}{100} \times 200 \\ & = 5 \times 2 = \underline{\underline{£10}}\end{aligned}$$

$$\begin{aligned}\text{HOME INSURANCE} & = 10\% \text{ of } 350 \\ & = \frac{10}{100} \times 350 \\ & = \frac{350}{10} = \underline{\underline{£35}}\end{aligned}$$

$$\begin{array}{r} 35 \\ \times 2 \\ \hline 70 \\ \times 2 \\ \hline 140 \end{array}$$

$$\begin{aligned}\text{GREG EARNS} & = 530 + 6 \times 10 + 4 \times 35 \\ & = 530 + 60 + 140 \\ & = 530 + 200 \\ & = \underline{\underline{£730}}\end{aligned}$$







**Answer 13**

In a company, the ratio of the number of men to the number of women is 3:2

40% of the men are under the age of 25

10% of the women are under the age of 25

What percentage of all the people in the company are under the age of 25?

$$M : W$$

$$3 : 2 \quad \rightarrow \quad 3+2 = 5$$

$$\frac{3}{5} : \frac{2}{5}$$

$$\text{U25s} = \frac{40}{100} \times \frac{3}{5} + \frac{10}{100} \times \frac{2}{5}$$

$$= \frac{120}{500} + \frac{20}{500}$$

$$= \frac{140}{500}$$

$$= \frac{14 \times \cancel{10}^2}{\cancel{5} \times 100}$$

$$= \frac{14 \times 2}{100}$$

$$= \frac{28}{100} = \underline{\underline{28\%}}$$



Answer 14

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?

RAILTICKETS

CCC:  $\frac{2.25}{100} \times 60$

$5 \overline{) 2.25}$

$45 \times 3 = 135$

$= \pounds 1.35$

BF:  $\pounds 0.80$

TOTAL £2.15

CHEAPTRAINS

CCC:  $\frac{1.5}{100} \times 60$

$= 3 \times 3$

$= 0.9$

$= \pounds 0.90$

BF  $\pounds 1.90$

TOTAL £2.80

IGNORE PERCENT POINT

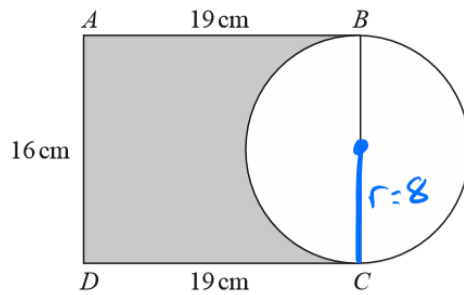
PUT DECIMAL POINT BACK

IT WILL BE CHEAPER TO BUY FROM RAILTICKETS



**Answer 15**

Here is a diagram showing a rectangle,  $ABCD$ , and a circle.



$BC$  is a diameter of the circle.

Calculate the percentage of the area of the rectangle that is shaded.  
Give your answer correct to 1 decimal place.

$$\begin{aligned} \text{PERCENTAGE SHADED} &= \frac{\square - \square}{\square} \times 100 \\ &= \frac{19 \times 16 - \frac{1}{2} \times \pi \times 8^2}{19 \times 16} \times 100 \\ &= 66.9306... \\ &\quad \downarrow < 5 \\ &\quad \text{Round Down} \\ &= \underline{\underline{66.9\%}} \end{aligned}$$

