

AQA – Ratio, proportion and rate of change – GCSE 2022 Mathematics1. *June/2022/Paper_8300/2F/No.6*

A machine to clean carpets can be hired.

Machine hire

£25 per day

Cleaning fluid

1-litre bottle £10

2-litre bottle £18

Rana wants to

hire the machine for 1 day

and

buy 5 litres of cleaning fluid.

Work out the **smallest** total amount she could pay.**[3 marks]**

Answer £ _____

2. June/2022/Paper_8300/2F/No.9

(a) Ali revises each day for five days.

On each of the first **four** days he revises from 5 pm to 8 pm

On the fifth day he starts revising at 1 pm

He finishes when he has revised for a **total** of 18 hours for the five days.

What time does he finish on the fifth day?

[3 marks]

Answer _____

(b) Sofia is revising for Maths.

She tries to work out $3 \times (4 + 2)$

Here is her working.

$$\begin{aligned} 3 \times (4 + 2) &= 12 + 3 \\ &= 15 \end{aligned}$$

What mistake has she made?

[1 mark]

3. June/2022/Paper_8300/2F/No.11

Nihal has savings of £168

He uses $\frac{5}{7}$ of his savings to buy sports equipment.

- (a) Assume that he will use $\frac{1}{3}$ of the rest of the money to buy a shirt.

How much of his savings, in £, will he have left?

[3 marks]

Answer £ _____

- (b) In fact, he uses **more** than $\frac{1}{3}$ of the rest of the money to buy a shirt.

What does this tell you about how much of his savings he has left?

Tick **one** box.

[1 mark]

It is more than the answer to part (a)

It is the same as the answer to part (a)

It is less than the answer to part (a)

It is not possible to tell

4. June/2022/Paper_8300/2F/No.13

Steve and Molly each buy 480 tea bags.

Small packs
80 tea bags for £1.90

Large packs
160 tea bags for £3.25

Steve buys only small packs.

Molly buys only large packs.

In total, how much **more** than Molly does Steve pay?

[4 marks]

Answer £ _____

5. June/2022/Paper_8300/2F/No.18

- (a) The people at a party are either adults or children.

adults : children = 9 : 11

What percentage are adults?

[2 marks]

Answer _____ %

- (b) The people at a different party are from Spain, France or Germany.

68% are from Spain

number from France = number from Germany

Work out number from Spain : number from France

Give your answer in the form $n : 1$ **[3 marks]**

Answer _____ : 1

6. June/2022/Paper_8300/2F/No.23

Sam types a constant number of words per minute.

He takes 8 minutes to type a report of 416 words.

How long does it take him to type an essay of 1534 words?

Give your answer in minutes and seconds.

[3 marks]

Answer _____ minutes _____ seconds

7. June/2023/Paper_8300/2H/No.7

Sam types a constant number of words per minute.

He takes 8 minutes to type a report of 416 words.

How long does it take him to type an essay of 1534 words?

Give your answer in minutes and seconds.

[3 marks]

Answer _____ minutes _____ seconds

8. June/2023/Paper_8300/2H/No.16

Amol owns a sandwich shop.

The shop is open from Monday to Saturday.

In June, Amol sold 3000 sandwiches.

(a) Amol wants to work out the mean number of sandwiches he sold per day in June.

His method is $3000 \div 30 = 100$

Make **one** criticism of Amol's method.

[1 mark]

(b) Amol received £6660 from selling the 3000 sandwiches in June.

The numbers of sandwiches sold were in the ratio

$$\text{meat} : \text{cheese} : \text{vegan} = 9 : 4 : 7$$

The price of a meat sandwich is £2.39

The price of a cheese sandwich is £1.89

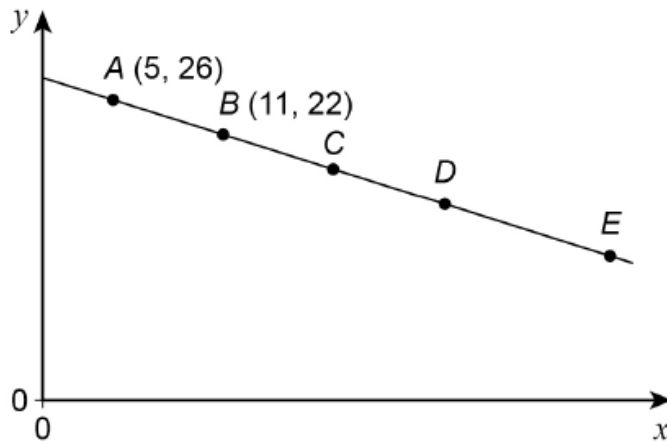
Work out the price of a vegan sandwich.

[4 marks]

Answer £ _____

9. June/2023/Paper_8300/2H/No.19

A, B, C, D and E are points on a straight line.



Not drawn accurately

A, B, C and D are equally spaced.

$$AD : DE = 2 : 1$$

Work out the coordinates of E .

[3 marks]

Answer (_____ , _____)

10. June/2023/Paper_8300/2H/No.26

Two objects, J and K, are applying pressure to areas of ground.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

For J, the force is 18.9 newtons and the area is 0.45 m²

$$\text{pressure for J : pressure for K} = 7 : 8$$

$$\text{area for J : area for K} = 9 : 5$$

Work out the force for K.

[4 marks]

Answer _____ newtons