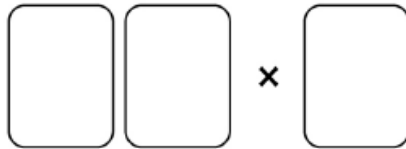


Numbers – GCSE Mathematics Paper 3**1. No.5**

Here are three number cards.



- (a) Use all three cards to make the answer to this calculation a multiple of 10

[1 mark]

- (b) Use all three cards to make the answer to this calculation a single-digit number.

[1 mark]

(c) Use all three cards to make this a correct calculation.

[1 mark]

$$\begin{array}{r} \boxed{6} + \boxed{} \\ \hline \boxed{} + \boxed{} \end{array} = 1$$

2. No.9

500 people started a race.

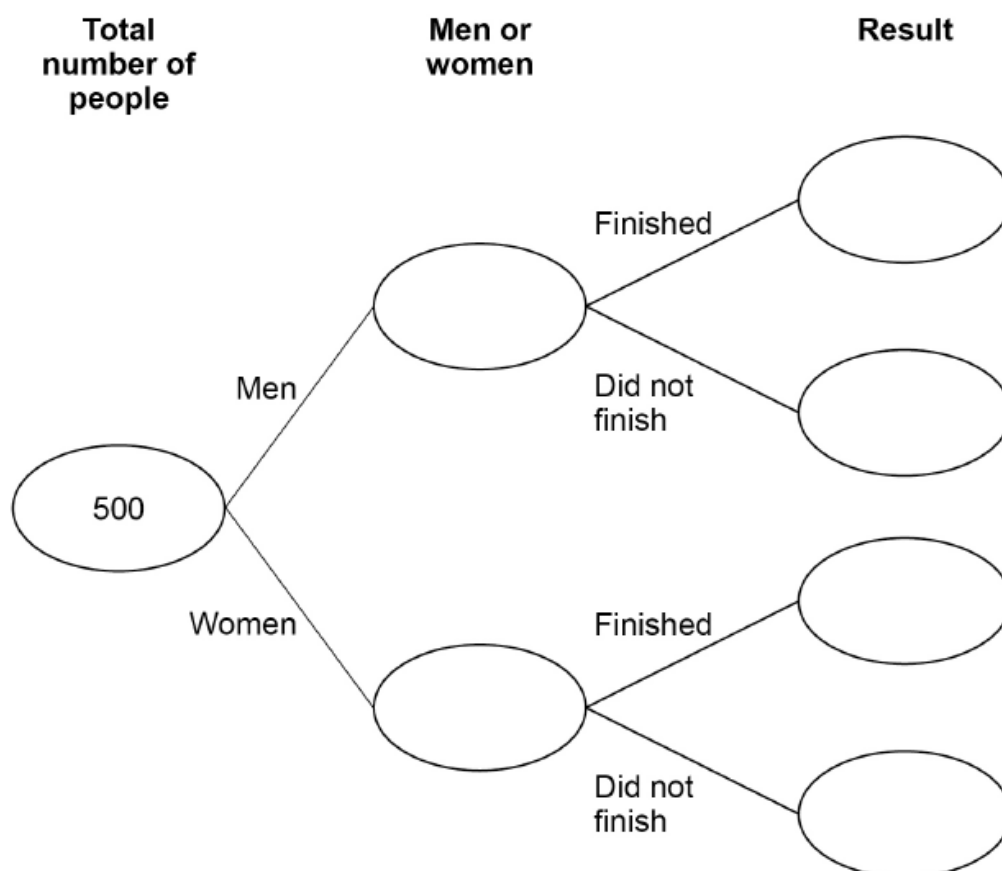
280 were men and the rest were women.

80% of the men finished the race.

30 women did **not** finish the race.

Complete the frequency tree.

[5 marks]



3. No.10

Put these three distances in order of size.

1.8 kilometres

1600 metres

$1\frac{3}{4}$ kilometres

Start with the shortest.

[2 marks]

Shortest distance _____

Longest distance _____

4. No.14

Here are ticket prices for a theme park.

Single tickets	
Adult	£48
Child	£26
Special offer tickets	
1 adult and 2 children	£82
2 adults and 2 children	£120

(a) Freya buys tickets for 3 adults and 4 children.

She pays the cheapest possible total cost.

How much does she save compared to buying all single tickets?

[4 marks]

Answer £ _____

(b) Leroy buys 5 single adult tickets.

He uses a voucher that reduces the price of tickets by a quarter.

In total, how much does he pay?

[3 marks]

Answer £ _____

5. No.16(b),(c)

In the formula $y = 3.6x$

y is speed in kilometres per hour (km/h)

x is speed in metres per second (m/s)

(b) Convert 50 km/h to m/s

Give your answer to the nearest whole number.

[1 mark]

Answer _____ m/s

(c) Convert 30 m/s to miles per hour.

Use 1 mile per hour = 1.61 km/h

[3 marks]

Answer _____ miles per hour

6. No.20

To the nearest 1000, there are 18 000 people at a festival.

- (a) Write down the minimum possible number of people at the festival.

[1 mark]

Answer _____

- (b) Write down the maximum possible number of people at the festival.

[1 mark]

Answer _____

7. No.1

What does $A \cup B$ represent in $P(A \cup B)$?

Circle your answer.

[1 mark]

A or B or both

A but not B

not A and not B

A and B

8. No.18

The pressure in a tyre is 30 pounds per square inch.

Convert the pressure into kilograms per square centimetre.

Use 1 pound = 0.45 kilograms
and
1 inch = 2.54 centimetres

[3 marks]

Answer _____ kg/cm^2

9. No.26

Prove algebraically that $3.4\dot{7} = \frac{313}{90}$

[3 marks]

10. No.3

Circle the fraction that is equal to $2\frac{1}{4}$

[1 mark]

$$\frac{7}{4}$$

$$\frac{9}{4}$$

$$\frac{21}{4}$$

$$\frac{25}{4}$$

11. No.6

Josh downloads album A.

A has 11 tracks.

Each track on A costs the same.

The total cost of downloading A is £8.80

Josh also downloads album B.

B has 14 tracks.

(a) Work out the total cost of downloading B.

Assume each track costs the same as a track on A.

[3 marks]

Answer £ _____

- (b) In fact, compared to the cost of each track on A
the cost of 6 tracks on B is **more** by 5p each
the cost of 8 tracks on B is **less** by 5p each.

What does this tell you about your answer to part (a)?

Tick **one** box.

☐

The total cost is **less** than my answer to part (a)

☐

The total cost is **more** than my answer to part (a)

☐

The total cost is **the same** as my answer to part (a)

Give a reason for your decision.

[2 marks]

12. No.8

Four positive whole numbers add up to 84

One of the numbers is a multiple of 17

The other three numbers are equal.

What are the four numbers?

[3 marks]

Answer _____

13. No.13

Write down **all** the prime numbers between 40 and 50

[2 marks]

Answer _____

14. No.16

Which shape **must** have rotational symmetry?

Circle your answer.

[1 mark]

isosceles triangle

trapezium

kite

parallelogram

15. No.23

In one hour a machine can make

600 nuts

or

720 bolts.

At 3 pm the machine starts working.

It makes 900 nuts and then changes to making bolts.

How many **bolts** will the machine make by 8 pm?

[4 marks]

Answer _____

16. No.3

Circle the lowest common multiple (LCM) of 5, 15 and 25

[1 mark]

5

45

75

150

17. No.3

Which two numbers, when added together, make a cube number?

Circle your answer.

[1 mark]

1 and 8

2 and 4

9 and 18

8 and 64

18. No.4

Convert $2\frac{1}{2}$ kilograms into grams.

Circle your answer.

[1 mark]

25 grams

250 grams

2500 grams

25 000 grams

19. No.8

Write down **all** the whole numbers that

are between 20 and 50

and

have a difference of 4 between their digits.

[2 marks]

Answer _____

20. No.12

A bottle contains 1.5 litres of water.

650 millilitres of the water is poured into a jug.

How much water is left in the bottle?

State the units of your answer.

[3 marks]

Answer _____

21. No.15

The table shows the cost of hiring a concrete mixer for up to 5 days.

Number of days	1	2	3	4	5
Cost	£14	£24	£34	£44	£54

Eva hires the concrete mixer for 5 days.

She says,

“The rate is £14 per day because the cost for 1 day is £14”

Is she correct?

Give a reason for your answer.

[2 marks]

22. No.16

x is a negative number.

Which statement is correct?

Tick **one** box.

[1 mark]

☐

$x + 10$ is always positive

☐

$x + 10$ is always negative

☐

$x + 10$ cannot be zero

☐

$x + 10$ could be positive or negative or zero

23. No.6**(a)** Tom is tiling a wall.

He needs to buy at least 100 tiles.

The tiles are sold in large packs and small packs.

Large pack 40 tiles £18

Small pack 28 tiles £14

*Special offer*25% reduction when you buy 3 or more **large** packs

Work out the cheapest cost for Tom to buy the packs of tiles he needs.

[3 marks]

Answer £ _____

(b) Tom is also tiling a floor.

The floor is a rectangle with length 600 cm and width 240 cm

Each tile is a square with side 40 cm

Tom uses this method to work out the number of tiles he needs.

$$\begin{aligned}\text{Number of tiles that will fit along the length} &= 600 \div 40 \\ &= 15\end{aligned}$$

$$\begin{aligned}\text{Number of tiles that will fit along the width} &= 240 \div 40 \\ &= 6\end{aligned}$$

$$\begin{aligned}\text{Total number of tiles needed} &= 15 + 6 \\ &= 21\end{aligned}$$

Give a reason why Tom's method is wrong.

[1 mark]

24. No.16

A building company employs

2 labourers

14 joiners

9 electricians

8 plumbers.

For a job, the company needs one of each type of worker.

(a) In how many ways can the company choose the four workers?

[2 marks]

Answer _____

(b) One labourer and two plumbers are on holiday.

In how many ways can the company now choose the four workers?

[2 marks]

Answer _____