



Name: _____ **Date:** _____ **Score:** _____ / 50

1 Here are the first four terms of a sequence.

3 6 12 24

- a. Write down the next term of the sequence.
- b. Write down the term-to-term rule of the sequence.

(2 marks)

Answer _____

2 Aisha invests £2500 in a savings account.

The account pays 4% compound interest each year.

Work out the amount in the account after 2 years.

(2 marks)

Answer _____

3 Solve $3x(x - 2) = 5$

Give your solutions correct to 3 significant figures.

(4 marks)

Answer _____

4 A box contains 5 green pegs and 3 white pegs.

Two pegs are taken from the box at random, without replacement.

Work out the probability that both pegs are green.

(3 marks)

Answer _____

5

a. Factorise $m^2 - 64$ b. Factorise $k^2 - 100$

(2 marks)

Answer _____

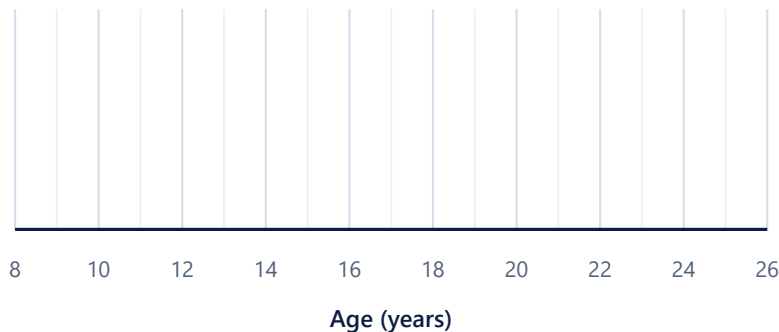
6

The ages of the members of a youth orchestra are summarised below.

Youngest	Lower quartile	Median	Upper quartile	Oldest
11	13	15	18	24

a. On the grid, draw a box plot for these ages.

b. Work out the interquartile range.



(3 marks)

Answer _____

7

Triangle M has vertices at (2, 1), (3, 1) and (2, 3).

Triangle M is enlarged by scale factor -3 , centre (1, 0), to give triangle N.

Work out the coordinates of the vertices of triangle N.

(2 marks)

Answer _____

8

A straight line passes through the points P (-3, 4) and Q (5, -8).

Work out the gradient of the line.

(2 marks)

Answer _____

9

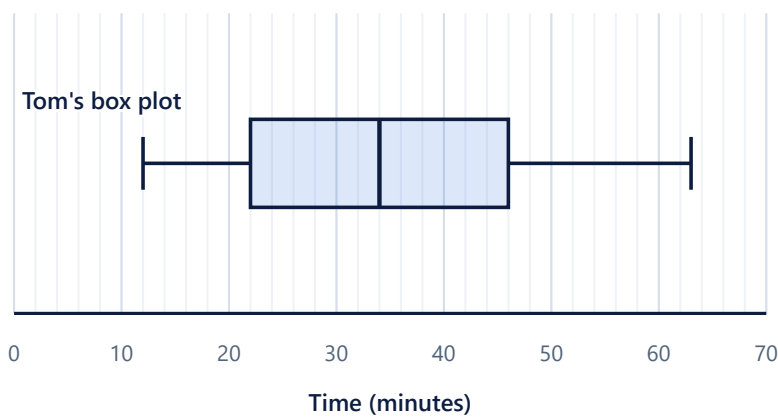
The table gives information about the times, in minutes, that 51 patients waited at a clinic.

Shortest time	15
Lower quartile	22
Median	38
Upper quartile	46
Longest time	63

Tom draws a box plot for this information. On his box plot:

- the left whisker ends at 12
- the line inside the box is drawn at 34

Write down two things that are wrong with Tom's box plot.



(2 marks)

Answer

- 10 The table shows the masses, m grams, of 40 tomatoes.

Mass (m grams)	Frequency
$50 < m \leq 60$	5
$60 < m \leq 70$	11
$70 < m \leq 80$	14
$80 < m \leq 90$	7
$90 < m \leq 100$	3

Complete the cumulative frequency table.

Mass (m grams)	Cumulative frequency
$50 < m \leq 60$	
$50 < m \leq 70$	
$50 < m \leq 80$	
$50 < m \leq 90$	
$50 < m \leq 100$	

(2 marks)

Answer _____

- 11 A straight line has equation $6x - 3y = 5$

Find the equation of the straight line that is parallel to this line and passes through the point $(1, 4)$.

(3 marks)

Answer _____

- 12 $y = 7.8$ correct to 1 decimal place.

$z = 4.1$ correct to 1 decimal place.

- Write down the upper bound of y .
- Work out the upper bound of $y - z$.

(3 marks)

Answer _____

- 13** A and B are points on a circle with centre O.
AB is not a diameter. M is the midpoint of the chord AB.
Prove that OM bisects angle AOB.

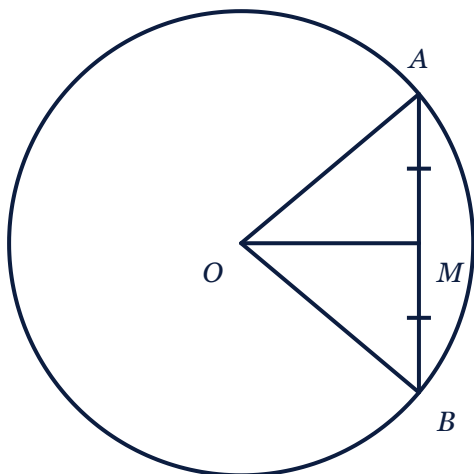


Diagram NOT accurately drawn

(3 marks)

Answer _____

- 14** The distance d metres a dropped object falls is directly proportional to the square of the time t seconds.
When $t = 3$, $d = 45$.
Work out the value of d when $t = 6$.

(2 marks)

Answer _____

- 15** Triangle ABC is isosceles with $AB = AC = 5$ cm and $BC = 8$ cm.
Triangle PQR is similar to triangle ABC with $PQ = PR = 12$ cm.
Work out the length of QR.

(3 marks)

Answer _____

16 A velocity-time graph shows a cyclist who accelerates uniformly from rest to 12 m/s in 8 seconds, then travels at a constant 12 m/s for 10 seconds.

- a. Work out the acceleration during the first 8 seconds.
- b. Work out the total distance travelled in the 18 seconds.

(3 marks)

Answer _____

17 A conversion graph for gallons and litres is a straight line through the points (0, 0) and (10, 45). The horizontal axis shows gallons and the vertical axis shows litres.

- a. Work out the gradient of the line.
- b. What does the gradient represent?

(3 marks)

Answer _____

18 Shape S is rotated 90° clockwise about (0, 0) and the image is then rotated 180° about (0, 0).

Describe fully the single transformation that maps S onto its final image.

(2 marks)

Answer _____

19 A sector of a circle has radius 6 cm and area $15\pi \text{ cm}^2$.

Work out the angle of the sector.

(2 marks)

Answer _____

20 Express 0.7 as a fraction.

(2 marks)

Answer _____

End of questions | Total 50 marks