Weekly check: Year 9 whole year

Year 9 | Key Stage 3 | The whole year | 20 questions, 50 marks

KS3 Maths weekly check

Scan for the solutions

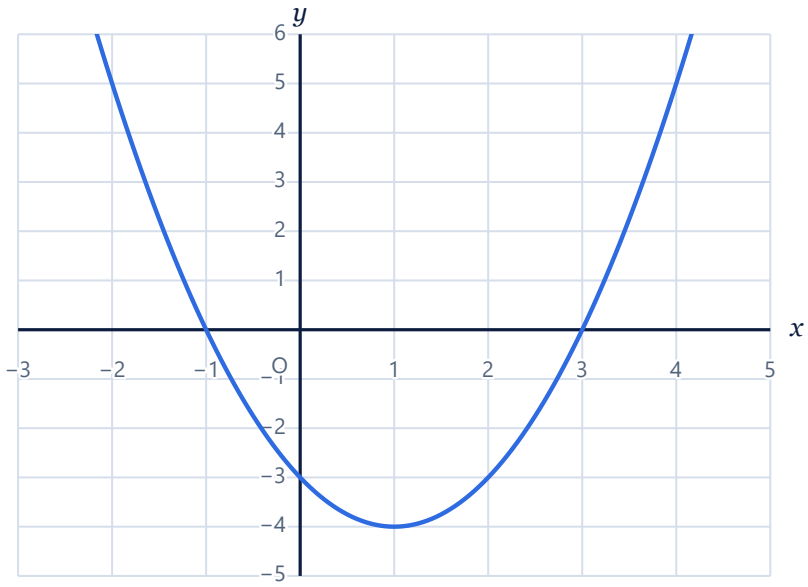
Name: _____ **Date:** _____ **Score:** _____ **/ 50**

1 The diagram shows the graph of $y = x^2 - 2x - 3$

a. Write down the coordinates of the point where the graph crosses the y-axis.

b. Write down the solutions of $x^2 - 2x - 3 = 0$

c. Write down the coordinates of the turning point of the graph.



(3 marks)

Answer _____

2 At the school tuck shop:

2 cookies and 1 drink cost £2.30

1 cookie and 1 drink cost £1.60

Work out the cost of one cookie and the cost of one drink.

(3 marks)

Answer _____

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3 5 miles is about 8 kilometres.

a. A school fun run is 12 km long. Work out about how many miles this is.

b. A road sign says London is 25 miles away. Work out about how many kilometres this is.

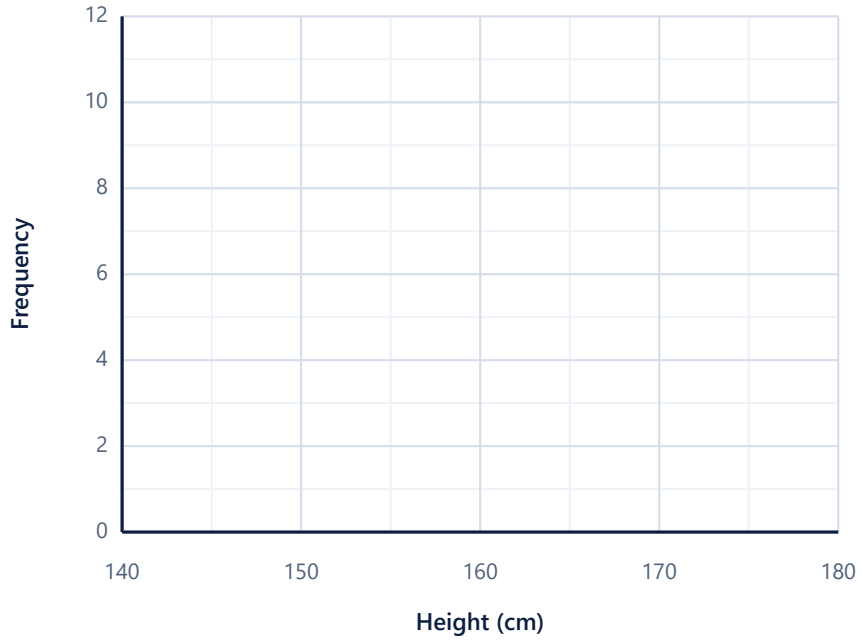
(2 marks)

Answer _____

4 The table shows the heights, in centimetres, of 30 students.

Height (h cm)	Frequency
$140 < h \leq 150$	6
$150 < h \leq 160$	11
$160 < h \leq 170$	9
$170 < h \leq 180$	4

Draw a frequency polygon for this information.



(2 marks)

Answer _____

5 A trapezium has parallel sides of length 8 cm and 14 cm.

The area of the trapezium is 66 cm^2.

Work out the perpendicular height of the trapezium.

(2 marks)

Answer _____

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6 The diagram shows a right-angled triangle.

Work out the length x.

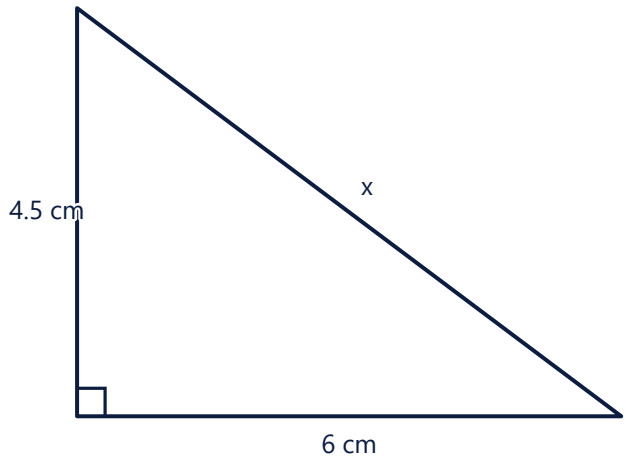


Diagram NOT accurately drawn

(2 marks)

Answer _____

7 a. Write each of these in the correct algebraic way.

(i) $a \times 4 \times b$ (ii) $m \div 3$ (iii) $y \times y \times 5$

b. Simplify $5p + 3q - 2p + q$

(3 marks)

Answer _____

8 A straight line has gradient -2 and passes through the point (3, 1).

Find the equation of the line.

(3 marks)

Answer _____

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9 a. Write 8^2 as a power of 2.

b. Write $4^3 \times 2^5$ as a single power of 2.

c. Write $9^4 \div 27$ as a single power of 3.

(4 marks)

Answer _____

10 Solve $3(x + 4) = 27$

(2 marks)

Answer _____

11 Work out $\frac{4}{9} \times \frac{3}{10}$

Give your answer as a fraction in its simplest form.

(2 marks)

Answer _____

12 A taxi charges £4 plus £2 for every mile.

Leo has £15. He travels m miles.

a. Write an inequality in m to show that Leo cannot spend more than £15.

b. Solve your inequality to find the greatest whole number of miles Leo can travel.

(3 marks)

Answer _____

13 Triangle A has vertices at (1, 1), (3, 1) and (1, 4).

Triangle B has vertices at (5, −1), (7, −1) and (5, 2).

Describe fully the single transformation that maps triangle A onto triangle B.

(2 marks)

Answer _____

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14 The price of a jacket is reduced by 10%.

The reduced price is £63.

Work out the price of the jacket before the reduction.

(2 marks)

Answer _____

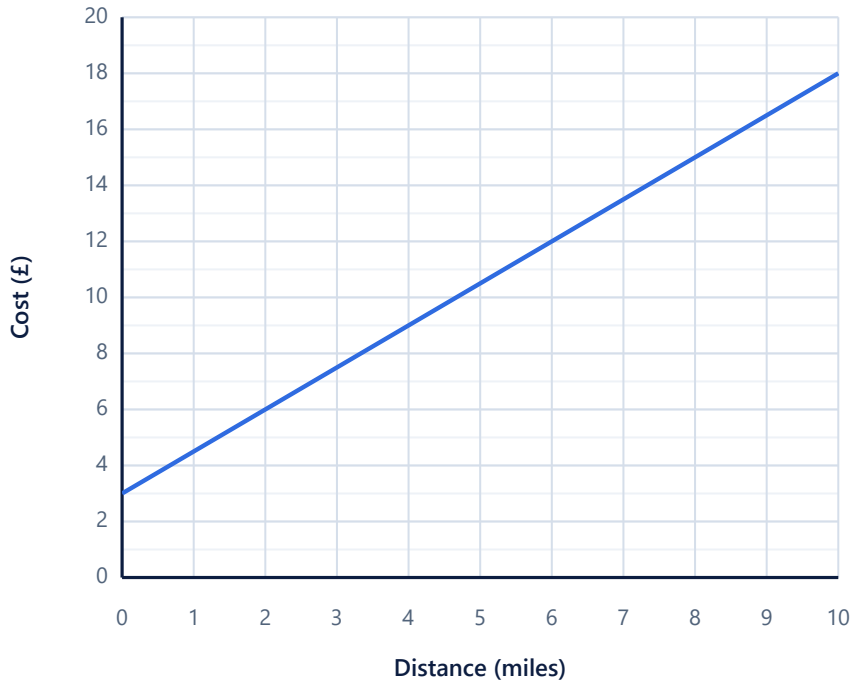
15 A taxi company shows its fares on a graph of cost against distance.

The graph is a straight line through (0, 3) and (10, 18), where cost is in pounds and distance is in miles.

a. Write down the fixed charge for any journey.

b. Work out the cost per mile.

c. Work out the fare for a journey of 6 miles.



(3 marks)

Answer _____

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16 The passcode for a tablet is a 4 digit number.

The first digit cannot be 0.

Digits may repeat.

a. Work out the number of different passcodes that are possible.

b. Ruby does not know the passcode. She types one 4 digit number at random, with a non-zero first digit. Write down the probability that Ruby types the correct passcode.

(3 marks)

Answer _____

17 a. There are 32 pupils in a Year 9 class. 12 of them walk to school. What fraction of the class walk to school? Give your answer in its simplest form.

b. Write 40 minutes as a fraction of 2 hours. Give your answer in its simplest form.

(2 marks)

Answer _____

18 Meera says

"Every multiple of 5 ends in the digit 5."

Give an example to show that Meera is wrong.

(2 marks)

Answer _____

19 A number y is 0.08, correct to 1 significant figure.

Complete the error interval for y.

..... $\leq y <$ .....

(2 marks)

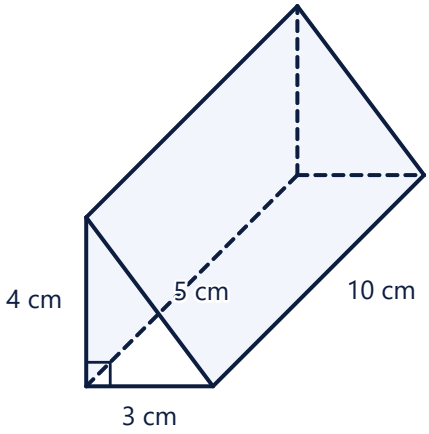
Answer _____

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20 The cross-section of a triangular prism is a right-angled triangle with base 3 cm, height 4 cm and hypotenuse 5 cm.

The length of the prism is 10 cm.

Work out the total surface area of the prism.



(3 marks)

Answer _____

End of questions | Total 50 marks

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