Weekly check: Year 8 part 2

Year 8 | Key Stage 3 | Part 2: the second third of the year | 20 questions, 50 marks

KS3 Maths weekly check

Scan for the solutions

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

1 A straight line passes through the points (1, 7) and (3, 13).

Find the equation of the line.

Give your answer in the form $y = mx + c$

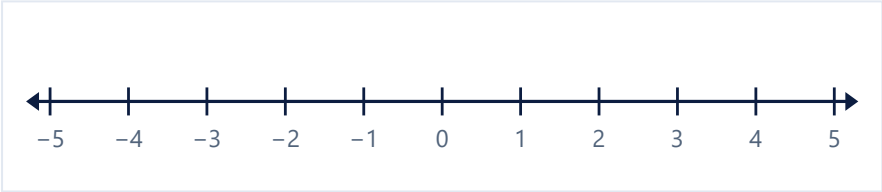
(3 marks)

Answer _____

2 Show each inequality on its number line.

a. $x \geq -2$

b. $-1 < x \leq 4$



a



b

(2 marks)

Answer _____

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3 A model of a car is made to a scale of 1 : 24.

a. The model is 18 cm long. Work out the length of the real car in metres.

b. The real car is 1.44 m high. Work out the height of the model in centimetres.

(3 marks)

Answer _____

4 The diagram shows two parallel lines crossed by a straight line.

One of the marked angles is 71°. The angle marked x° is the co-interior angle between the parallel lines on the same side of the crossing line.

Work out the value of x. Give a reason for your answer.

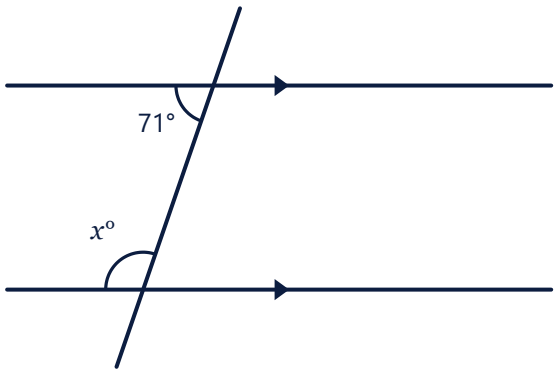


Diagram NOT accurately drawn

(3 marks)

Answer _____

5 A pattern of shapes tessellates if the shapes fit together around every point with no gaps and no overlaps.

a. Explain why regular hexagons tessellate.

b. Explain why regular pentagons do not tessellate.

c. Ella makes a floor tile pattern where two regular octagons and one square meet at every point. Show that this pattern has no gaps.

(3 marks)

Answer _____

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6 Here are the first four terms of an arithmetic sequence.

7 12 17 22

Explain why 81 is not a term of this sequence.

(2 marks)

Answer _____

7 A is the point with coordinates (2, 4).

B is the point with coordinates (8, 10).

Work out the coordinates of the midpoint of AB.

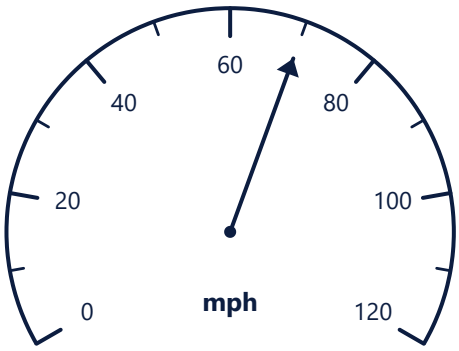
(2 marks)

Answer _____

8 The diagram shows the speedometer of a car.

a. Write down the speed shown on the speedometer.

b. Use 5 miles = 8 kilometres to change this speed to km/h.



(3 marks)

Answer _____

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9 The diagram shows an inequality on a number line.

Write down the inequality shown, using x.



(2 marks)

Answer _____

10 The diagrams show a triangle and a quadrilateral.

a. Work out the size of angle x.

b. Work out the size of angle y.

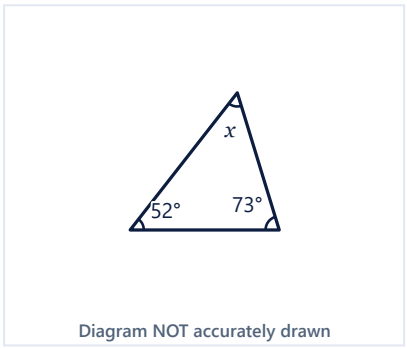


Diagram NOT accurately drawn

a

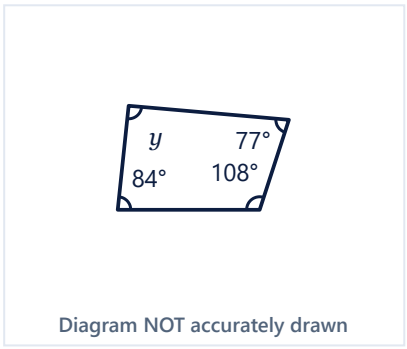


Diagram NOT accurately drawn

b

(2 marks)

Answer _____

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11 DE and FG are parallel straight lines.

Triangle ABC is drawn so that A lies on DE, and B and C both lie on FG.

D is to the left of A and E is to the right of A.

Angle DAB = 48° and angle ACB = 63°.

Work out the size of angle BAC.

Give a reason for each stage of your working.

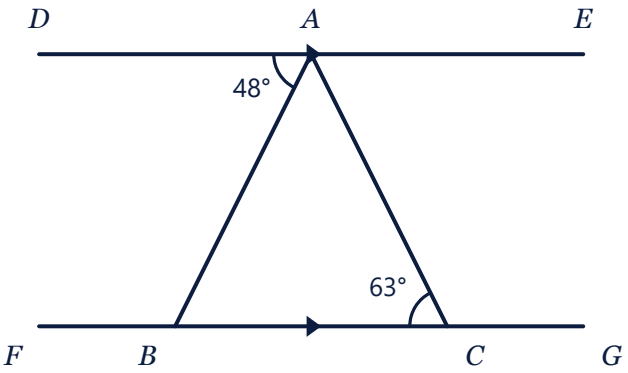


Diagram NOT accurately drawn

(4 marks)

Answer _____

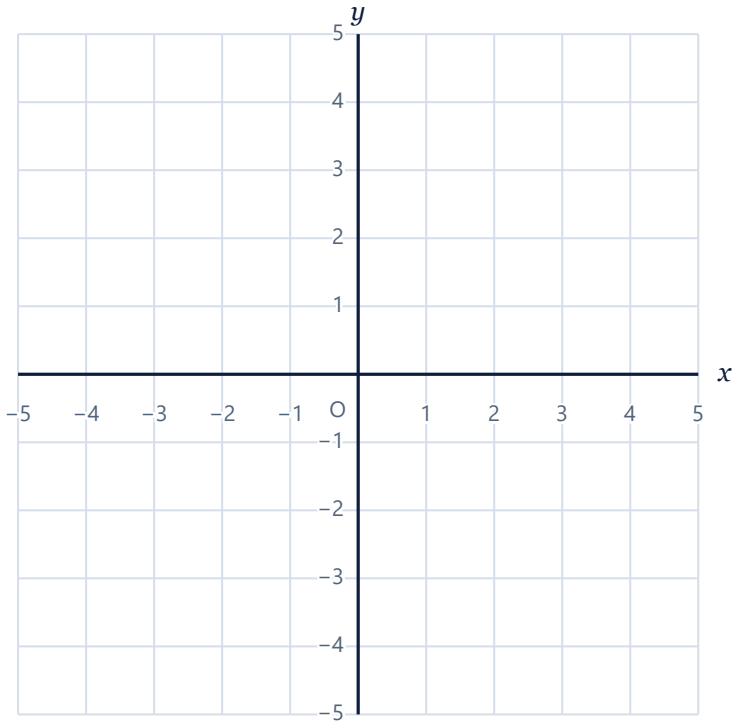
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12 A, B and C are three vertices of a parallelogram ABCD.

A is (−4, −1), B is (1, −1) and C is (3, 3).

a. On the grid, plot the points A, B and C.

b. Work out the coordinates of D.



(3 marks)

Answer _____

13 Simplify

a. $5a^2 + 3a - 2a^2 + 4a - 9$

b. $4xy - 7 + 2yx + 10$

(2 marks)

Answer _____

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14 Two angles fit together on a straight line. One of the angles is 64° and the other angle is y°.

a. Work out the value of y.

b. Give a reason for your answer.

(2 marks)

Answer _____

15 Here are four pieces of algebra.

A: $3x + 2 = 11$ B: $A = lw$ C: $4y - 7$ D: $2(x + 3) \equiv 2x + 6$

Write down which one is

a. an expression

b. an equation

c. a formula

d. an identity

(2 marks)

Answer _____

16 Here are the first four terms of an arithmetic sequence.

5 9 13 17

Find an expression, in terms of n, for the nth term of the sequence.

(2 marks)

Answer _____

17 Solve $\frac{w}{4} + 2 = 9$

(2 marks)

Answer _____

18 Dan and Ella share 45 sweets.

Ella gets 7 more sweets than Dan.

Dan says, "I got 20 sweets."

Is Dan right? You must show how you get your answer.

(3 marks)

Answer _____

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19 A straight line has equation $y = 3x - 2$

a. Write down the gradient of the line.

b. Write down the coordinates of the point where the line crosses the y-axis.

(2 marks)

Answer _____

20 a. The first term of a sequence is 7. The term-to-term rule is "multiply by 2 then subtract 3". Write down the first four terms.

b. The first term of another sequence is 50. The term-to-term rule is "subtract 8". Write down the first five terms.

(3 marks)

Answer _____

End of questions | Total 50 marks

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