

Solving linear inequalities on a number line

Grade 4 | Foundation and Higher | 19 questions, 60 marks

GCSE Maths topic practice



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Name: _____ **Date:** _____ **Score:** _____ / 60

1 n is an integer.

$$-2 < n \leq 3$$

Write down all the possible values of n .

(2 marks)

Answer _____

2 Solve $4x + 3 < 19$

(2 marks)

Answer _____

3 Write down the inequality shown by each number line.

a. A closed circle at 3 with the arrow pointing left.

b. An open circle at -2 with the arrow pointing right.

(2 marks)

Answer _____

4 Describe how to show each inequality on a number line. Say what kind of circle to use at each end and which way the arrow points.

a. $x \geq 4$

b. $x < -1$

(2 marks)

Answer _____

5 n is an integer such that $n > -3$ and $2n + 1 \leq 5$

Write down all the possible values of n .

(2 marks)

Answer _____

- 6 The diagram shows an inequality on a number line.

Write down the inequality shown, using x .



(2 marks)

Answer _____

- 7 x is an integer.

$$-3 < x \leq 2$$

Write down all the possible values of x .

(2 marks)

Answer _____

- 8 Solve $5x - 2 > 3x + 10$

(3 marks)

Answer _____

- 9 Solve $\frac{2x}{5} - 1 < 3$

(3 marks)

Answer _____

- 10 a. Solve $3(x - 1) \geq 6$

b. Show your solution on the number line.



(3 marks)

Answer _____

11 Solve $3x - 5 \geq 10$

Describe how to show your answer on a number line.

(3 marks)

Answer _____

12 A number line has an open circle at -1 with the arrow pointing left, and a closed circle at 3 with the arrow pointing right.

a. Write down the inequalities shown by the number line.

b. Is $x = 3$ a solution? Is $x = -1$ a solution?

(3 marks)

Answer _____

13 Chloe wants to show $x > 2$ on a number line.

She draws a solid circle at 2 with an arrow pointing to the right.

a. Explain the mistake Chloe has made.

b. Write down the greatest integer that satisfies $4x - 3 < 18$

(4 marks)

Answer _____

14 a. Solve $-3 < 2x + 1 \leq 9$

b. Write down all the integer values of x that satisfy your answer to part a.

(4 marks)

Answer _____

15 Solve $7 - 2x > 1$

Write down the positive integers that satisfy the inequality.

(3 marks)

Answer _____

16 x is an integer. x satisfies both $2x - 1 > 5$ and $x + 4 \leq 11$.

Solve each inequality and write down all the possible values of x . Describe the number line for the values that satisfy both inequalities.

(4 marks)

Answer _____

17 a. n is an integer with $-4 < n \leq -1$

Write down all the possible values of n .

b. Solve $7y - 3 > 2y + 22$ and show your solution on the number line.



(5 marks)

Answer _____

18

a. Solve $5 - 2x \geq 1$ b. Factorise $x^2 + 5x + 6$

(5 marks)

Answer _____

19

a. n is an integer with $-5 \leq n < -1$ Write down all the possible values of n .b. Solve $4(x + 3) > 2x + 17$

c. Write down the smallest integer that satisfies your answer to part b.

(6 marks)

Answer _____

End of questions | Total 60 marks