

# Linear Inequalities And Shading

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Name: \_\_\_\_\_

Date: \_\_\_\_\_

Tick one circle for each statement — on screen (click) or with a pen. Then try the quick checks: write your answer in the box, check it against the answers at the end, and tick “right” when you got it. ★ = IGCSE Extended tier only.

## Solving inequalities

Solving, number lines and listing integer solutions.

|                                                                        | Don't know            | Shaky                 | Got it                |
|------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|
| I can solve a linear inequality.                                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can reverse the sign when I multiply or divide by a negative number. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can list the integers that satisfy an inequality.                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can show an inequality on a number line.                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

## Regions on a graph ★

Solid or broken lines, testing points and describing a region.

|                                                            | Don't know            | Shaky                 | Got it                |
|------------------------------------------------------------|-----------------------|-----------------------|-----------------------|
| I can decide whether a boundary line is solid or broken. ★ | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can test a point to find the right side of a line. ★     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can write the inequalities that describe a region. ★     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

## Quick checks

One quick question per statement. Answer in the box, then check the answers at the end.

1. Solve  $3x - 5 > 7$ .

Answer: \_\_\_\_\_ ☐ I got it right

2. Solve  $4 - 2x \leq 10$ .

A  $x \geq -3$  B  $x \leq -3$  C  $x \geq 3$  D  $x \leq 7$

Answer: \_\_\_\_\_ ☐ I got it right

3. How many integers  $n$  satisfy  $-2 < n \leq 3$ ?

Answer: \_\_\_\_\_ ☐ I got it right

4. On a number line,  $x \geq 2$  is drawn with...

A a filled circle at 2 and an arrow to the right B an open circle at 2 and an arrow to the right C a filled circle at 2 and an arrow to the left D an open circle at 2 and an arrow to the left

Answer: \_\_\_\_\_ ☐ I got it right

5. Which inequality is drawn with a broken (dashed) line?

A  $y \geq 2x$  B  $y < x + 3$  C  $x \leq 4$  D  $y \geq -1$

Answer: \_\_\_\_\_ ☐ I got it right

6. Does the point (1, 5) satisfy  $y > 2x + 1$ ?

**A** Yes   **B** No

Answer: \_\_\_\_\_

☐ I got it right

7. A region lies on or above  $y = 1$  and on or to the left of  $x = 3$ . Which describes it?

**A**  $y \geq 1$  and  $x \leq 3$    **B**  $y \leq 1$  and  $x \geq 3$    **C**  $y > 1$  and  $x < 3$    **D**  $x \geq 1$  and  $y \leq 3$

Answer: \_\_\_\_\_

☐ I got it right

## Answers

Try every question first, then check.

1. 4

2. A:  $x \geq -3$

3. 5

4. A: a filled circle at 2 and an arrow to the right

5. B:  $y < x + 3$

6. A: Yes

7. A:  $y \geq 1$  and  $x \leq 3$