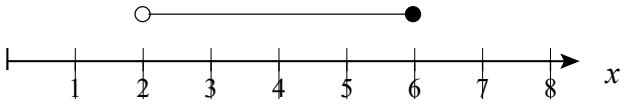
Topic Test 1 (20 minutes)

Inequalities (non-calculator) - Higher

1 Which inequality is represented by this solution?



Circle your answer.

[1 mark]

$2 < x < 6$ $2 \leq x < 6$ $2 \leq x \leq 6$ $2 < x \leq 6$

2 Circle the set of integer values that satisfies $-4 \leq 2n < 2$

[1 mark]

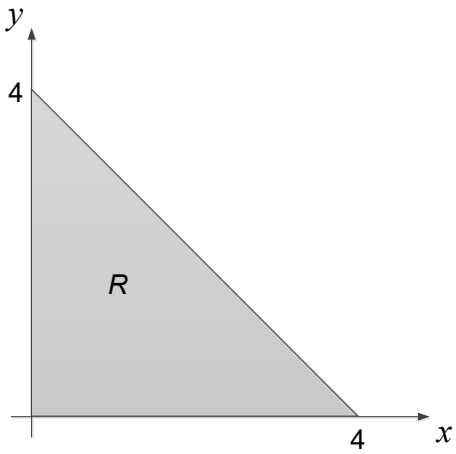
{– 3, – 2, – 1, 0, 1} {– 4, – 3, – 2, – 1, 0, 1, 2}

{– 2, – 1, 0} {– 2, – 1, 0, 1}

3 The shaded region *R* represents the solution to 3 inequalities.

Circle the correct inequalities.

[1 mark]



$x > 0, y > 0, x + y < 4$ $x \geq 0, y \geq 0, x + y \geq 4$

$x \geq 0, y \geq 0, x + y \leq 4$ $x > 0, y > 0, x + y \leq 4$

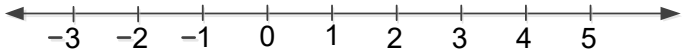
4 (a) Solve $-5 \leq 3x + 1 < 13$

[2 marks]

Answer _____

4 (b) Show the answer to part (a) on the number line.

[1 mark]



5 Lee spent £12 making buns.
He sells each bun for £0.80
His target is to make a profit of more than £5

Set up and solve an inequality to work out the least number of buns he must sell to achieve his target.

[3 marks]

Answer _____

6 Work out the largest integer that satisfies $2x + 5 \leq 13 - x$

You **must** show your working.

[3 marks]

Answer _____

7 Solve the inequality $2x^2 - 3x - 5 > 0$

[4 marks]

Answer _____

8 On this grid, show the region represented by

$x > 2$

$y > 1$

$2x + 3y \leq 12$

[4 marks]