

Writing and Graphing Inequalities on a Number Line

Grade 6 math · Test Answer Key · Standards: 6.EE.B.5, 6.EE.B.8

Use this answer key to score the test. Each solution explains the symbol and the circle chosen, and the scoring notes say how points are awarded. Give partial credit for a correct idea with a small slip.

Standards: 6.EE.B.5, 6.EE.B.8 · **Level:** Grade 6

Question 1 Writing inequalities (2 points)

(a) $n \geq 15$. (b) $k < -3$.

Scoring: 1 point per part.

Question 2 Finding solutions (2 points)

$3 - 2 = 1$, $5 - 2 = 3$, $8 - 2 = 6$, $11 - 2 = 9$. A value works when the result is at least 6, so 8 ($6 \geq 6$) and 11 work.

8 and 11

Scoring: 1 point for the substitutions, 1 point for the two values.

Question 3 Reading a graph (2 points)

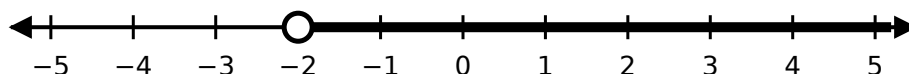
(a) Closed circle at 1 and shading left: $x \leq 1$.

(b) For example, **-4 is a solution and 2 is not**; any number at most 1 works.

Scoring: 1 point per part.

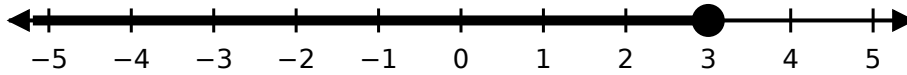
Question 4 Graphing (3 points)

(a) Open circle at -2, shade right.



$$x > -2.$$

(b) Closed circle at 3, shade left.



$$x \leq 3.$$

(c) The open circle shows -2 is not a solution of $x > -2$. The closed circle shows 3 is a solution of $x \leq 3$.

Scoring: 1 point per part.

Question 5 Real-world statements (2 points)

(a) $p \leq 48$. (b) $c > 12.5$.

Scoring: 1 point per part.

Question 6 Trampoline weight limit (3 points)

(a) $w \leq 250$.

(b) $180 \leq 250$ and $250 \leq 250$ are true; $251.5 \leq 250$ is false. **180 and 250.**

(c) **Yes:** between any two weights, such as 249 and 250, there are more weights like 249.5 and 249.9.

Scoring: 1 point per part.

Question 7 Closed versus open (3 points)

(a) $4 \geq 4$ is true, so **yes** for $x \geq 4$. $4 > 4$ is false, so **no** for $x > 4$.

(b) $x \geq 4$ has a closed circle at 4; $x > 4$ has an open circle. Both shade right.

(c) Any number above 4, such as **4.5**.

Scoring: 1 point per part.

Question 8 Fundraiser goal (3 points)

(a) $r \geq 600$.

(b) $610 \geq 600$ is true: **yes**.

(c) The smallest allowed total is 600, and $600 - 425 = \mathbf{\$175}$.

Scoring: 1 point per part.