

Grade 7 · Two-Step Inequalities · Test Answer Key

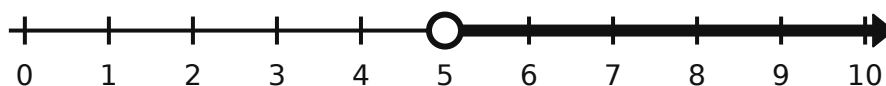
Common Core 7.EE.B.4b · mathovore.fr

Use this answer key to score the test out of 20 points. Each solution shows the steps, and the scoring note explains where partial credit is awarded. Give full credit for any correct equivalent method.

Grade 7 Common Core: 7.EE.B.4b

Question 1: Solve and graph (2 points)

Subtract 4: $3x > 15$. Divide by 3: $x > 5$. Open circle at 5, shade right.

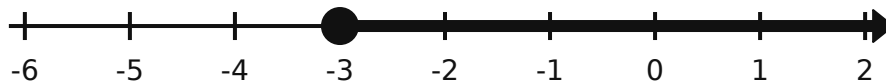


Solution of question 1.

Scoring: 1 point for $x > 5$; 1 point for a correct graph with an open circle.

Question 2: Negative coefficient (2 points)

Add 3: $-5x \leq 15$. Divide by -5 and reverse the sign: $x \geq -3$. Closed circle at -3 , shade right.



Solution of question 2.

Scoring: 1 point for $x \geq -3$ (including the reversed sign); 1 point for a correct graph with a closed circle.

Question 3: Testing values (2 points)

The inequality is $4x < 12$, so $x < 3$.

(a) $4(2) - 7 = 1 < 5$: **yes**.

(b) $4(3) - 7 = 5 < 5$ is false: **no**.

Scoring: 1 point for each correct decision with a substitution shown.

Question 4: Find the error (2 points)

Ethan divided both sides by -4 but did not reverse the inequality sign. The correct solution is $x < -4$.

Scoring: 1 point for naming the missing sign reversal; 1 point for $x < -4$.

Question 5: Fraction coefficient (2 points)

Add 3: $\frac{x}{4} \geq 5$. Multiply by 4: $x \geq 20$.

Scoring: 1 point for $\frac{x}{4} \geq 5$; 1 point for $x \geq 20$.

Question 6: Reading a graph (2 points)

(a) A closed circle at 3 with shading to the right: $x \geq 3$.

(b) $2x \geq 6$, so $2x+1 \geq 7$. The blank is **7**.

Scoring: 1 point for each part.

Question 7: Saving for a skateboard (3 points)

(a) $40+6w > 100$.

(b) $6w > 60$, so $w > 10$.

(c) w must be more than 10, so the fewest whole number is **11 weeks** (at 10 weeks he has exactly \$100).

Scoring: 1 point per part.

Question 8: Freezer cooling (3 points)

(a) $8-4h < -12$.

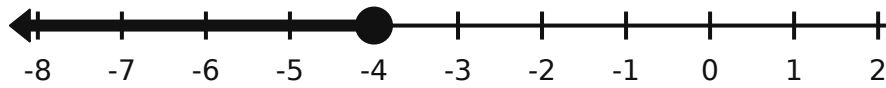
(b) $-4h < -20$. Divide by -4 and reverse the sign: $h > 5$.

(c) The freezer is below -12°F after more than 5 hours (it is exactly -12°F at 5 hours).

Scoring: 1 point per part; part (b) needs the reversed sign.

Question 9: Solve with a leading constant (2 points)

Subtract 7: $-2x \geq 8$. Divide by -2 and reverse the sign: $x \leq -4$.



Solution of question 9.

Scoring: 1 point for $-2x \geq 8$; 1 point for $x \leq -4$.

Total
20 points