ALBERT

Name _____ Date _____

Two-Step Inequalities Worksheet

Grade 7 · Common Core 7.EE.B.4b

> Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.

Practice

Builds the skill step by step.

1. Solve: $2x + 3 > 11$

2. Solve: $3x - 5 \leq 10$

3. Which number is a solution of $4x + 1 < 13$?

   A. 3

   B. 2

   C. 4

   D. 5

4. Solve: $\frac{x}{2} + 4 \geq 9$

5. Solve: $-2x + 1 > 9$

6. Solve: $5x + 2 < -13$

7. Which inequality matches "Seven more than three times a number n is at least 25"?

   A. $3n + 7 \leq 25$

   B. $3n + 7 \geq 25$

   C. $3(n + 7) \geq 25$

   D. $7n + 3 > 25$

8. Solve: $-3x - 4 \leq 11$

9. Sam has $40. He buys a $7 book and some pens that cost $3 each. What is the greatest number of pens he can buy?

10. Which graph shows $x \geq -2$ on a number line?

    A. An open circle at -2, shaded to the right

    B. A closed circle at -2, shaded to the right

    C. A closed circle at -2, shaded to the left

    D. An open circle at -2, shaded to the left

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On Level

Grade-level practice.

1. Solve: $\frac{1}{3}x - 2 > 4$

2. Solve: $-\frac{1}{2}x + 3 \geq 7$

3. Solve: $4(x - 2) < 20$

4. You are paid $60 per week plus $4 for each sale. You want to earn at least $130 this week. How many sales do you need?

   A. At least 18 sales

   B. At least 17 sales

   C. At most 18 sales

   D. At most 17 sales

5. Solve: $1.5x + 2.5 \leq 10$

6. Solve: $-3(x + 1) > 12$

7. A taxi charges $3 plus $2.50 per mile. Jo has $28. What is the greatest number of whole miles she can ride?

8. Kim solved $-4x + 2 > 18$ and got $x > -4$. What is the correct solution?

   A. $x > -4$

   B. $x < -4$

   C. $x < 4$

   D. $x > 4$

9. A club needs at least $450 for a trip. It has $120 and sells candles for $6 each. How many candles must it sell?

10. Solve: $\frac{2}{5}x + 1 \leq -3$

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Challenge

Multi-step and word problems that stretch it.

1. Solve: $-0.25x + 6 < 4$

2. Tickets cost $12 each, and parking costs $15. A group has $100. What is the greatest number of tickets the group can buy?

3. Which inequality has the solution $x \leq -6$?

   A. $-2x + 5 \geq 17$

   B. $2x + 5 \geq 17$

   C. $-2x + 5 \leq 17$

   D. $2x - 5 \leq 17$

4. Solve: $\frac{3}{4}(x - 8) \geq -6$

5. A rectangle is 7 m wide and x m long. Its perimeter must be less than 50 m. What lengths are possible?

6. Elena has $60 and spends $4.50 a day on lunch. For how many days d does she still have more than $15 left?

7. Solve: $-5(2 - x) \leq 20$

8. Which number is NOT a solution of $3 - 2x < 9$?

   A. -4

   B. -2

   C. 0

   D. 5

9. A plumber charges \$65 plus \$40 per hour. A customer will pay at most \$245. What is the greatest number of hours the plumber can work?

10. Leo solved $-3x > 12$ and wrote $x > -4$. Give the correct solution and explain his mistake.