LESSON 12-5

Puzzles, Twisters & Teasers

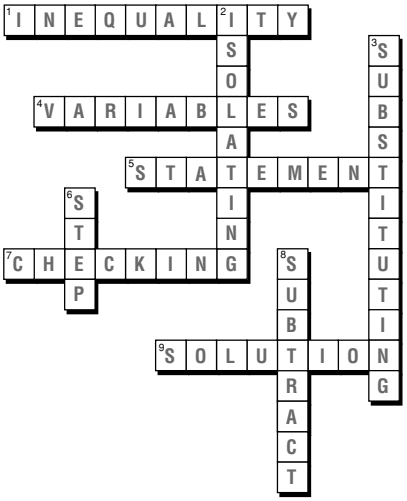
Are All Puzzles Created Equal?

Across

1. You can use an ____ to solve a problem.
4. Inequalities with ____ usually have many solutions.
5. Any value of a variable that makes a ____ true is a solution of the inequality.
7. When ____ your solution, you should choose a number in the solution set that is easy to work with.
9. All of the solutions of an inequality are called the ____ set.

Down

2. You can find solution sets for inequalities by ____ the variable.
3. You can check your answer by choosing any number in the solution set and ____ it into the original inequality.
6. You can solve one-____ inequalities by adding or subtracting.
8. When you add or ____ the same number to both sides of an inequality, the statement will still be true.



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LESSON 12-6

Practice A

Solving Inequalities by Multiplying or Dividing

Solve. Choose the letter for the best answer.

1. $5n \leq -20$

Ⓐ $n \leq -4$ **B** $n < -4$ **C** $n \geq -4$ **D** $n \geq 4$

2. $-3k > -21$

F $k > 7$ Ⓗ $k < 7$ **G** $k > -7$ **J** $k < -7$

3. $\frac{m}{5} \geq -1$

A $m \leq -5$ Ⓑ $m \geq -5$ **C** $m \leq 5$ **D** $m \geq 5$

4. $\frac{v}{-8} < -4$

F $v \geq 32$ **H** $v < 32$ Ⓙ $v > 32$ **G** $v \leq -32$

5. $-2y < 12$

A $y < 6$ **B** $y < -6$ Ⓓ $y > -6$ **C** $y > 6$

6. $\frac{h}{5} \leq 4.2$

Ⓕ $h \leq 21$ **H** $h \geq 21$ **G** $h \leq 22$ **J** $h \geq 22$

7. $\frac{z}{-9} \leq -4$ $z \geq 36$

8. $\frac{b}{3} > 15$ $b > 45$

9. $\frac{m}{6} < -2.5$ $m < -15$

Solve. Check each answer.

10. $7c < -42$ $c < -6$

11. $-20a \geq -100$ $a \leq 5$

12. $-8t > 5$ $t < -\frac{5}{8}$

13. It cost $730 to put on the school play. How many tickets must be sold at $6 apiece in order to make a profit?

at least 122 tickets must be sold.

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LESSON 12-6

Practice B

Solving Inequalities by Multiplying or Dividing

Solve.

1. $\frac{n}{5} \leq 1.6$ $n \leq 8$

2. $\frac{b}{3} > -8$ $b > -24$

3. $\frac{a}{3} \geq -9$ $a \geq -27$

4. $\frac{t}{-6} < -7$ $t > 42$

5. $\frac{s}{-12} \leq -5$ $s \geq 60$

6. $\frac{r}{5.3} \leq 6$ $r \leq 31.8$

Solve. Check each answer.

7. $8c < -64$ $c < -8$

8. $-16a \geq -24$ $a \leq 1\frac{1}{2}$

9. $-12t > 9$ $t < -\frac{3}{4}$

10. $-3s \leq -180$ $s \geq 60$

11. $18b > -24$ $b > -1\frac{1}{3}$

12. $-6m \geq 4$ $m \leq -\frac{2}{3}$

13. It cost Sophia $530 to make wind chimes. How many wind chimes must she sell at $12 apiece to make a profit?

at least 45 wind chimes

14. It cost the Wilson children $55 to make lemonade. How many glasses must they sell at 75¢ each to make a profit?

at least 74 glasses

15. Jorge's soccer team is having its annual fund raiser. The team hopes to earn at least three times as much as it did last year. Last year the team earned $87. What is the team's goal for this year?

at least $261

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LESSON 12-6

Practice C

Solving Inequalities by Multiplying or Dividing

Solve.

1. $14w \leq -2.8$ $w \leq -0.2$

2. $-0.6v > -54$ $v < 90$

3. $\frac{u}{7} \geq -9.8$ $u \geq -68.6$

4. $\frac{f}{-0.5} < -0.2$ $f > 0.1$

5. $-2.5e < 1.5$ $e > -0.6$

6. $\frac{m}{4.5} \leq 6.3$ $m \leq 28.35$

Solve. Check each answer.

7. $4p < (-2)^3$ $p < -2$

8. $-8c \geq -4 \cdot 6$ $c \leq 3$

9. $-12a > 8^2$ $a < -5\frac{1}{3}$

10. $\frac{x}{-4 \cdot 3} \leq -5 \cdot (-3)$ $x \geq 180$

11. $\frac{d}{6} > -3\frac{2}{3}$ $d > -22$

12. $1\frac{1}{6}k < 14$ $k < 12$

Write an inequality, then solve.

13. Four families are planning to make a joint purchase at a warehouse club. In order to purchase no more than 15 pounds of potatoes for each family, how many potatoes should they buy?

$\frac{x}{4} \leq 15$, $x \leq 60$ lb

14. Lila's swim team is raising money to help buy a new pool cover. The team has raised $635. This is 65% of their goal. At least how much more do they need to reach their goal?

$x \geq \$341.92$, they need at least $341.92

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