Name _____

Solving Equations with Integers

When solving equations with integers, use inverse operations to "undo" each other. Also, remember to do the same thing to both sides of an equation.

Solve $s + 14 = -12$.

$s + 14 - 14 = -12 - 14$

$s + 0 = -26$

$s = -26$

Solve $-3y = 60$.

$\frac{-3y}{-3} = \frac{60}{-3}$

$y = -20$

Solve $\frac{d}{-10} = 7$.

$\left(\frac{d}{-10}\right) \times (-10) = 7 \times (-10)$

$d = -70$

Solve and check each equation.

1. $t + 8 = -20$ _____

2. $b - (-15) = 25$ _____

3. $\frac{k}{5} = 15$ _____

4. $w + (-4) = 9$ _____

5. $\frac{n}{-9} = 7$ _____

6. $2p = -18$ _____

7. $-3d = -27$ _____

8. $\frac{y}{3} = -12$ _____

9. $40r = -280$ _____

10. **Number Sense** Suppose a number was multiplied by -3. What would you do to undo the multiplication?

_____

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Solving Equations with Integers

Solve and check each equation.

1. $y - (-6) = -6$

   $y =$ _____

2. $\frac{-80}{t} = 8$

   $t =$ _____

3. $-4w = -80$

   $w =$ _____

4. $u - (-96) = 2$

   $u =$ _____

5. $55 + h = -7$

   $h =$ _____

6. $n \div -9 = -9$

   $n =$ _____

7. $x + (-8) = -15$

   $x =$ _____

8. $-21c = 21$

   $c =$ _____

Reasoning Without solving, tell whether the variable is greater than, less than, or equal to -15. Tell how you decided.

9. $p + 14 = 2$

   _____

   _____

10. The temperature at 3:00 P.M. was $-5°F$. The temperature 1 hr later was $-8°F$. Solve the equation $-5 + d = -8$ to find the change in temperature.   _____

11. A climber reached 2,500 ft up a mountain. Over the next 3 hr, she descended 600 ft down the mountain. Solve the equation $3y = -600$ to find the number of feet she descended per hour.   _____

Test Prep

12. Which is the value of s in $s - (-87) = -120$?

    A. -207 **B.** -33 **C.** 33 **D.** 207

13. **Writing in Math** Write an equation in which the variable g stands for a negative integer. Then solve the equation for g.

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