

## Expressions &amp; Equations Test Review

1) Given the expression  $8y - 12$  answer the following questions.

- a) What is the variable?  $y$   
 b) What is the coefficient?  $8$   
 c) What is the constant?  $-12$

Simplify each expression.

2)  $1 + p - 9$

$p - 8$

3)  $m - 7(6 - 6m)$

$m - 42 + 42m$

$43m - 42$

Solve each equation.

4)  $r - 17 = -30$

$+17 +17$

$r = -13$

5)  $x + 8 = -10$

$x = -18$

6)  $11x = -132$

$x = -12$

7)  $12 = \frac{x}{17}$

$x = 204$

8)  $-10 = 7a - 2a$

$-10 = 5a$

$-2 = a$

9)  $-3 = 2 - 4x + 3$

$-3 = -4x + 5$

$-8 = -4x$

$2 = x$

10)  $5 + 3x = 3x$

$5 = 0$

no solution

11)  $2(-6 + m) = -40$

$-12 + 2m = -40$

$2m = -28$

$m = -14$

12)  $5 = -9 - 2x$

$14 = -2x$

$-7 = x$

14) Determine if  $x=7$  is a solution to  $2x+4=18$ . Explain your answer.

Yes, when I replace the  $x$  with a 7  
 $2(7) + 4 = 18$   
 $14 + 4 = 18$   
 $18 = 18$  I get a true statement.

16) When I solved the equation  $2x+5=2x+3$ , on the last step I got  $5=3$ . How many solutions does this equation have?

no solution

13)  $2x + 36 = -5(x - 3)$

$2x + 36 = -5x + 15$

$7x + 36 = 15$

$7x = -21$

$x = -3$

15) How many solutions does the equation  $3x+5=3(x+4)-7$  have?

$3x+5=3x+12-7$

$3x+5=3x+5$

$-3x \quad -3x$

$5=5$  True

Infinite # of solutions

Write each as an algebraic expression.

17) 15 less than  $n$  is 42

$n - 15 = 42$

18) the product of a number and 8 is equal to 46

$8n = 46$

Write each as a verbal expression.

19)  $n + 10 = 49$

number increased by 10 is equal to 49

20)  $\frac{n}{8} = 13$

a number divided by 8 is 13

21) The seventh grade class is putting on a variety show to raise money. It cost \$700 to rent the banquet hall that they are going to use. If they charge \$15 for each ticket, how many tickets do they need to sell in order to raise \$1,000?

$x = \#$  of tickets

a) Write an equation that represents the situation.

$700 + 15x = 1,000$

$15x = 300$

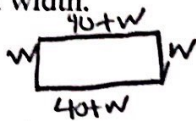
$x = 20$

b) How many tickets do they need to sell?

20 tickets

- 22) The perimeter of a rectangle is 304 cm. The length is 40 cm longer than the width. Find the dimensions of the rectangle.

a) Draw a rectangle and label the length and width.



b) Write an equation that represents the perimeter of the rectangle.

$$W + W + 40 + W + 40 + W = 304 \quad W = 56$$

$$4W + 80 = 304$$

$$4W = 224$$

c) What is the length and width of the rectangle?

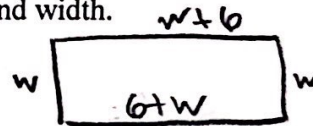
$$W = 56$$

$$L = 40 + 56$$

width is 56 cm  
length is 96 cm

- 23) The perimeter of a rectangle is 62 cm. The length is 6 cm longer than the width. Find the dimensions of the rectangle.

a) Draw a rectangle and label the length and width.



b) Write an equation that represents the perimeter of the rectangle.

$$W + 6 + W + 6 + W + W = 62 \rightarrow W = 12.5$$

$$4W + 12 = 62$$

$$4W = 50$$

c) What is the length and width of the rectangle?

width is 12.5 cm  
length is 18.5 cm

- 24) The admission to the fair is \$10 and each ride is \$3.50. If you only have \$35, how many rides can you go on?

$$x = \# \text{ of rides}$$

a) Write an equation that models this situation.

$$10 + 3.50x = 35$$

$$3.50x = 25$$

$$x = 7.143$$

b) How many rides can you go on?

I can go on  
7 rides.

- 25) You are an electrician and you charge \$80 an hour and the cost of any parts. A customer needed \$350 worth of new parts. The final bill for the customer was \$859.

How long did it take you to fix the electrical issue?  $x = \# \text{ of hours it takes to solve the problem}$

a) Write an equation that models this situation.

$$350 + 80x = 859$$

$$80x = 509$$

$$x = 6.36$$

b) How long did it take you to fix the issue?

It took 6.4 hours  
to fix it.