

# Unit 3 Assessment REVIEW

Name: \_\_\_\_\_

## Topic 1:

Write the following expressions without parenthesis using fewest terms possible:

1.)  $-4x - 3y + 9x + 18y$

$$5x + 15y$$

2.)  $6b + a - 3ab - 3a + 2b - 5b$

$$-3ab - 2a + 3b$$

3.)  $3(5x + 3) - 4(3x - 7)$

$$15x + 9 - 12x + 28$$

$$3x + 37$$

4.)  $9x - 2(x + 4)$

$$9x - 2x - 8$$

$$7x - 8$$

5.)  $\frac{1}{5}(5x + 20) - \frac{3}{4}(8x - 12)$

$$x + 4 - 6x + 9$$

$$-5x + 13$$

6.) What is the value of n when the expression  $(-y + 8.3) + (3.2y - 9)$  is equivalent to  $2.2y + n$ ?

$$8.3 - 9 \rightarrow \frac{9.0}{0.7} - \frac{8.3}{0.7}$$

$$n = -0.7$$

## Topic 2: Writing Expressions

1.) Admission to a carnival costs \$4. Each ride ticket costs \$1.50. Create an expression that shows the total cost to go to the carnival if you buy  $t$  tickets?

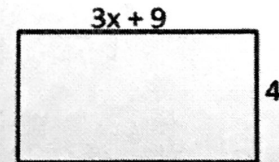
$$4 + 1.5t$$

2.) Jackson deposits \$120 into his account and then withdraws \$20 each week. Write an expression for the amount in his account after  $w$  weeks.

$$120 - 20w$$

3) a.) Write a simplified expression for the perimeter of the rectangle.

$$2(3x + 9) + 2(4) = 6x + 26$$



b.) Write a simplified expression for the area of rectangle.

$$4(3x + 9) = 12x + 36$$

## Topic 3: Evaluating Expressions

1) Sophia pays a \$17.99 membership fee for an online music store.

A. If Sophia purchases  $n$  songs for \$0.99 each, write an expression for the total cost.

$$17.99 + 0.99n$$

B. What is the total cost if Sophia buys 8 songs? \$25.91

2) A landscaper charges \$25 for each job plus an additional \$15 for each hour worked.

a.) Write an expression to represent the total cost of a landscape job. Explain what the variable used in the expression represents.

$$25 + 15h \quad h = \text{hours worked}$$

b.) Evaluate how much he earned for a job that took him 5 hours.

$$\$100$$

3) What is the value of the expression below when  $n = 24$  and  $p = -3$ ?

$$\frac{n}{3} - 1 + 5p - 2n + p^2$$

$$\frac{(24)}{3} - 1 + 5(-3) - 2(24) + (-3)^2 = -47$$

**Topic 4:****Factoring**

Factor the following problems (always finding the GCF). Circle your answers.

1.)  $24a + 15$

$3(8a + 5)$

2.)  $12c + 48d + 16$

$4(3c + 12d + 4)$

3.)  $-16x + 18xy - 10xyz$

$-2x(8 - 9y + 5yz)$

4.) Which expressions are a factor of  $-60xyz - 24xy + 72xyz$ ? Select ALL that apply.

- A. 2  
 B. 4  
 C. 24  
 D.  $12y$   
 E.  $2xy$   
 F.  $6xyz$   
 G.  $xyz$

5) A rectangle has a width of 7 units. The area of the rectangle is  $28x + 42$  square units. What is the length of the rectangle?

$$\frac{28x + 42}{7} = 4x + 6$$

6) The perimeter of a square is  $4(x + 20)$ . What does  $x + 20$  represent?

Length of each side

7) Lucy mows five lawns. The total earned is  $5(x + 15)$ . What does  $x + 15$  represent?

Amount earned per lawn

8) Jeremy works 5 hours per day. He charges an hourly fee and an additional \$9. He uses the expression  $25x + 45$  to show how much he made over the course of five days, where  $x$  is the hourly rate. Write an equivalent expression that shows how much he makes per day.

$5(5x + 9)$

**Topic 5:****Spiral Review**

1) Solve the following multiplication problems:

a.)  $-3(8)$

$-24$

b.)  $3.2 \cdot -3.4$

$-10.88$

c.)  $-\frac{2}{20} \cdot \frac{10}{11}$

$-\frac{1}{11}$

2) Solve the following division problems:

a.)  $\frac{-35}{-5}$

7

b.)  $7.7 \div 0.9$

$8.\bar{5}$

c.)  $-\frac{5}{12} \div -\frac{20}{11}$

$\frac{11}{48}$

3.) Simplify each expression. a)  $4(6x + 8) - 2(7x - 10)$ 

$24x - 32 - 14x + 20$

$10x - 12$

b)  $0.4(2b + c) + 0.9c - 1.3b$ 

$0.8b + 0.4c + 0.9c - 1.3b$

$-0.5b + 1.3c$

4.) Write  $a - b$  as an addition expression:

$a + (-b)$