Math 6 – Unit 3: Expressions
End of Unit Study Guide

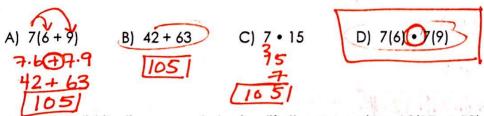Name: **Key**

Class Period: 1 2 3 4 Date: _____

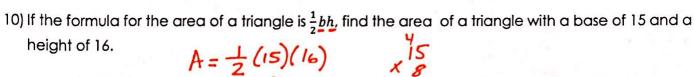1) What is the name of a number that multiplies a variable, such as the "9" in the term "9x"?

Coefficient

2) Evaluate: $(6^2 - 8 \div 4) + 27$

$(36 - 8 \div 4) + 27$
$(36 - 2) + 27$
$(34) + 27$
61

3) Write in exponential form: $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7 =$ 7^5

4) Evaluate $3n^2 + 4n - n$ if $n = 7$

$3(7)^2 + 4(7) - 7$
$3(49) + 4(7) - 7$
$147 + 4(7) - 7$
$147 + 28 - 7$
$175 - 7$ **168**

49
$\times 3$
147

147
$+ 28$
175
$- 7$
168

5) Write an expression that represents "12 more than a number?"

$n + 12$

6) Simplify this expression by combining like terms: $7n + 15n^2 + 13n - 14n^2 - n + 17n$

$n^2 + 36n$

7) The cost of seeing a movie is $8.25 for admission, plus an additional $2.25 for each snack purchased. Write an expression to represent the cost of seeing a movie and purchasing s snacks.

$8.25 + 2.25s$

8) Which expression is NOT equivalent to the others?

A) $7(6 + 9)$

$7 \cdot 6 + 7 \cdot 9$
$42 + 63$
105

B) $42 + 63$

105

C) $7 \cdot 15$

15
$\times 7$
105

D) $7(6) \cdot 7(9)$

9) Apply the distributive property to simplify the expression: $12(17x + 19)$

$12 \cdot 17x + 12 \cdot 19$
204x + 228

12
$\times 17$
84
120
204

12
$\times 19$
108
120
228

10) If the formula for the area of a triangle is $\frac{1}{2}bh$, find the area of a triangle with a base of 15 and a height of 16.

$$A = \frac{1}{2}(15)(16)$$
$$A = 8(15)$$
$$A = 120 \text{ units}^2$$

$$\begin{array}{r} \overset{4}{15} \\ \times\ 8 \\ \hline 120 \end{array}$$

11) Evaluate "4 cubed."

$$4^3 = 4 \cdot 4 \cdot 4$$
$$\underset{16}{\underbrace{}}$$

$$\begin{array}{r} \overset{2}{16} \\ \times\ 4 \\ \hline 64 \end{array}$$

$$\boxed{64}$$

12) The expression **120 + 0.30m** can be used to find the total price for renting a car, where **m** represents the number of miles driven. Determine the cost if m = **130 miles** in the rental car.
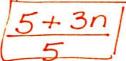
$$120 + 0.30m$$
$$120 + 0.30(130)$$
$$120 + 39$$
$$\boxed{\$159}$$

$$\begin{array}{r} 130 \\ \times\ .30 \\ \hline 000 \\ 3900 \\ \hline 39.00 \end{array}$$

13) Factor to write an expression that is equivalent to $\underline{30x + 5}$.

$$5(6x + 1)$$

14) Translate into an algebraic expression: **nine more than the <u>quotient</u> of seven cubed and six.**

$$\boxed{\dfrac{7^3}{6} + 9}$$

15) (Melissa and 4) of her friends rent a movie for $5 and buy *n* medium drinks for $3 each. If they split these costs evenly, write an expression that can be used to find the amount each girl should pay?
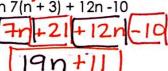
5 people

$$\boxed{\dfrac{5 + 3n}{5}}$$

16) Write and example of the **commutative property?** $2 \cdot 3 = 3 \cdot 2$

17) Label the parts of the expression:

Coefficient   Constant

$$4n + 15$$

variable

18) A family of four (2 adults and 2 kids) is going to the pumpkin patch. Regular admission is $12 for adults and $4 for kids. How much will they pay to get in?

$$2(12) + 2(4)$$
$$24 + 8$$
$$\boxed{\$32}$$

19) Simplify the expression 7(n + 3) + 12n -10

$$\boxed{7n} + \boxed{21} + \boxed{12n} \boxed{-10}$$
$$\boxed{19n + 11}$$

20) What are like terms?

Like terms are terms that have the same variable to the same power (exponent)