

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

**Unit 1 Review**

Solve the following. Place the answer in the blank provided. Show all of your work! Round to the tenths place and be sure to include the units.

7.57 Miles 1. Convert 40,000 feet to miles.

$$40,000 \text{ ft} * \frac{1 \text{ mile}}{5280 \text{ ft}} =$$

5280 feet = 1 mile  
0.034 ounces = 1 milliliter  
0.454 kg = 1 pound  
1.6 kilometers = 1 mile  
73 gallons = 2 barrels  
1.05 quarts = 1 liter  
4 quarts = 1 gallon  
16 ounces = 1 pound

2.27 kg 2. A big bowl of Mac and Cheese weighs 80 oz.  
How heavy is it in kg?

$$80 \text{ oz} * \frac{1 \text{ lb}}{16 \text{ oz}} * \frac{0.454 \text{ kg}}{1 \text{ lb}} = \frac{36.32}{16}$$

7200 Rev/hr 3. A tire is rotating at 120 revolutions per minute. How many revolutions is the tire making in an hour?

$$\frac{120 \text{ Rev}}{1 \text{ min}} * \frac{60 \text{ min}}{1 \text{ hr}}$$

102.67 ft/sec 4. How fast is a car going 70 mph traveling in feet per second?

$$\frac{70 \text{ mi}}{1 \text{ hr}} * \frac{5280 \text{ ft}}{1 \text{ mi}} * \frac{1 \text{ hr}}{60 \text{ min}} * \frac{1 \text{ min}}{60 \text{ sec}} = \frac{369600}{3600}$$

**Multiple Choice: Write your answer as a CAPITAL letter in the space provided.**

C 5. How many terms are in the expression  $x^3 - 18x^2 + 8x - 9$ ?

A. 2

B. 3

☒ C. 4  
polynomial

D. 9

B 6. What are the term(s), coefficient(s), and constant(s) described by the expression:  
 $6c + 5$

A. term:  $6c$ , coefficient: 6, constant: 5

☒ B. terms:  $6c$  and 5, coefficient: 6,  
constant: 5

C. terms:  $6c$  and 5, coefficient: 5,  
constant: 6D. term:  $11c$ , coefficient: 11, constant:  
none

Answers May Vary 7. Write an expression with 3 terms, coefficients of -5 and 7, and a constant of -12.

$$-5x^2 + 7x - 12$$

Simplify the following polynomial operations. Write your answer in standard form. Circle or cloud your answer.

8.  $(3x^3 - 5x^2 + x - 4) + (-4x^3 + 2x - 8)$

$$-x^3 - 5x^2 + 3x - 12$$

9.  $(3x^3 - 5x^2 - x + 1) - (2x^3 - x^2 + 3x - 5)$

$$x^3 - 4x^2 - 4x + 6$$

10.  $(4x + 5)^2$

$$(4x + 5)(4x + 5)$$

$$16x^2 + 20x + 20x + 25$$

$$16x^2 + 40x + 25$$

11.  $(4x - 3)(5x + 9)$

$$20x^2 + 36x - 15x - 27$$

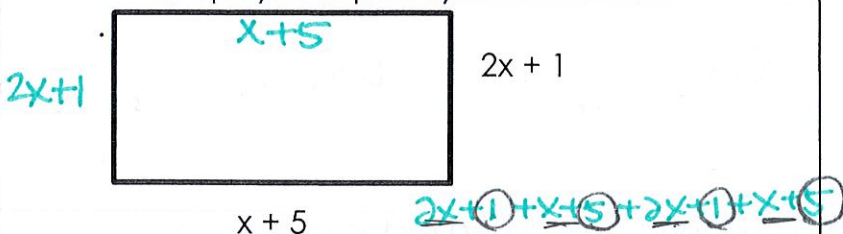
$$20x^2 + 21x - 27$$

12.  $(3x - 2)(4x^2 - 9x + 2)$

$$12x^3 - 27x^2 + 6x - 18x^2 + 18x - 4$$

$$12x^3 - 35x^2 + 24x - 4$$

13. Find perimeter and area of the rectangle. Simplify completely.



Perimeter =  $6x + 12$

Add All Sides

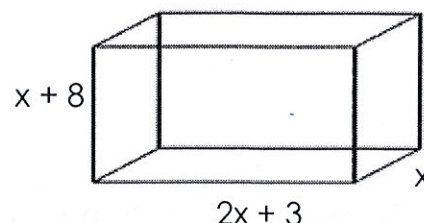
Area =

$$l \times w \quad (2x+1)(x+5)$$

$$4x^2 + 10x + x + 5$$

$$4x^2 + 11x + 5$$

14. Find the volume of the given rectangular prism. Simplify completely.



Volume =  $2x^3 + 19x^2 + 24x$

$l \times w \times h$

$$x(2x+3)(x+8)$$

$$2x^2 + 3x(x+8)$$

$$2x^3 + 16x^2 + 3x^2 + 24x$$



Simplify the following radical operations completely and circle your answer.

15.  $\sqrt{500}$   
 $\sqrt{100 \cdot 5}$

$10\sqrt{5}$

16.  $\sqrt[2]{24} - 3\sqrt[3]{54}$   
 $\sqrt[2]{4 \cdot 6} - 3\sqrt[3]{9 \cdot 6}$

$-7\sqrt{6}$

$2\sqrt{6} - 9\sqrt{6}$

17.  $(\sqrt{2} + 3)(5\sqrt{3} - 1)$

$5\sqrt{6} - \sqrt{2} + 15\sqrt{3} - 3$

18.  $(\sqrt{5} - 2)(\sqrt{5} + 2)$

$\sqrt{25} + 2\sqrt{5} - 2\sqrt{5} - 4$

$5 - 4$   
 $1$

\* Simplified NO shared number under the house \*

19.  $(5 + \sqrt{3})^2$

$(5 + \sqrt{3})(5 + \sqrt{3})$

$25 + 5\sqrt{3} + 5\sqrt{3} + \sqrt{9}$

$10\sqrt{3} + 25 + 3$

$10\sqrt{3} + 28$

20. Justify your response to the given statement. Include example(s) in your justification.

"The product of two radical expressions is always an irrational number." FALSE  $\rightarrow$  sometimes \*

$\sqrt{4} * \sqrt{6} =$

$R * I = I$

$\sqrt{4} * \sqrt{25}$

$R * R = R$

21. Scott loves to play baseball. He comes up to the batting changes to work on his hitting every day until the season starts. He is going to hit 150 balls every day for the next 10 weeks. How many balls will he hit over the next 10 weeks?

$\frac{150 \text{ b}}{1 \text{ day}} * \frac{7}{1 \text{ WK}} * \frac{10 \text{ WK}}{1 \text{ season}} = 10,500 \text{ balls}$

$10 \text{ WK} * \frac{7 \text{ day}}{1 \text{ WK}} * \frac{150 \text{ ball}}{1 \text{ day}} = 10,500 \text{ ball}$