

Algebra 1

HW #2 Converting Rates and Units

Name: Key

1. Leah rides 22 feet per second on her bicycle. How many miles per hour does she ride?

$$\begin{array}{|c|c|c|c|} \hline 22 \cancel{\text{ft}} & 1 \text{ mi} & 60 \cancel{\text{sec}} & 60 \cancel{\text{min}} \\ \hline 1 \cancel{\text{sec}} & 5280 \cancel{\text{ft}} & 1 \text{ min} & 1 \text{ hr} \\ \hline \end{array} = \frac{79,200}{5,280} \frac{\text{mi}}{\text{hr}}$$

$$= \underline{\underline{15 \text{ mph}}}$$

2. How many yards are in 3 miles?

$$\begin{array}{|c|c|c|} \hline 3 \text{ mi} & 5280 \cancel{\text{ft}} & 1 \text{ yd} \\ \hline & 1 \text{ mi} & 3 \cancel{\text{ft}} \\ \hline \end{array} = \frac{3 \times 5280}{3} = \underline{\underline{5,280 \text{ yds}}}$$

3. The new school copy machine makes 3,480 copies per hour. How many copies does this machine make per minute?

$$\begin{array}{|c|c|} \hline 3,480 \text{ copies} & 1 \text{ hr} \\ \hline 1 \text{ hr} & 60 \text{ min} \\ \hline \end{array} = \frac{3,480}{60} \frac{\text{copies}}{\text{min}}$$

$$= \underline{\underline{58 \text{ copies per minute}}}$$

4. I have a job that requires me to work 180 hours each month. At this rate, how many hours will I work in one year?

$$\begin{array}{|c|c|} \hline 180 \text{ hours} & 12 \text{ months} \\ \hline 1 \text{ month} & 1 \text{ yr} \\ \hline \end{array} = \frac{180 \times 12}{1} = \underline{\underline{2,160 \frac{\text{hours}}{\text{yr}}}}$$

Use your chart with the conversion factors to convert these units. Show your work.

5. 18 miles = 28.98 km
x 1.61

6. 500 mL = 16.9 fl oz
÷ 29.58

7. 60 lb = 27.27 kg
÷ 2.2

8. 24 in = 60.96 cm
x 2.54

9. 15 m = 49.2 ft
x 3.28

10. 64 oz = 1814.4 g
x 28.35

11. Paul caught a snake that measured 17 inches long. How long is the snake in centimeters? $\times 2.54$

$$\underline{\underline{43.18 \text{ cm}}}$$

12. I bought 7 liters of paint. How many gallons of paint did I buy?

$$\div 3.79$$

$$\underline{\underline{1.85 \text{ gallons}}}$$

13. My car broke down and I had to walk 12 miles to get to a gas station. How many kilometers did I walk? $\times 1.61$

$$\underline{\underline{19.32 \text{ km}}}$$

14. Mary bought her sister perfume in a bottle that contained 6 fluid ounces. How many milliliters of perfume did Mary buy? $\times 29.58$

$$\underline{\underline{177.48 \text{ mL}}}$$

QUIZ #1

LESSON

❖ Part I: Classify Polynomials

- Polynomial --- an expression that can have ^{x, y, a, m} variables, ^{x^2, y^3} exponents, and ^{$2, 15, -7, -\frac{1}{2}, .73$} constants
- Monomial --- polynomial having **one** term
- Binomial --- polynomial having **two** terms
- Trinomial --- polynomial having **three** terms

Ex. Classify the following polynomials based on
number of terms.

$$\underbrace{3x} + \underbrace{4y} - \underbrace{7}$$

Trinomial

$$-3xy$$

Monomial

$$16ab + 9w$$

Binomial


$$12$$

Monomial

Unit 2

- Linear Polynomial --- in the form $ax + b$ 1st degree

Ex: $4x + 3$



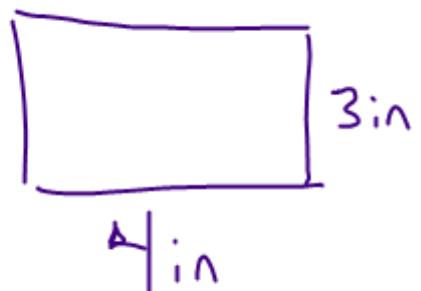
Unit 3

- Quadratic Polynomial --- in the form $ax^2 + bx + c$

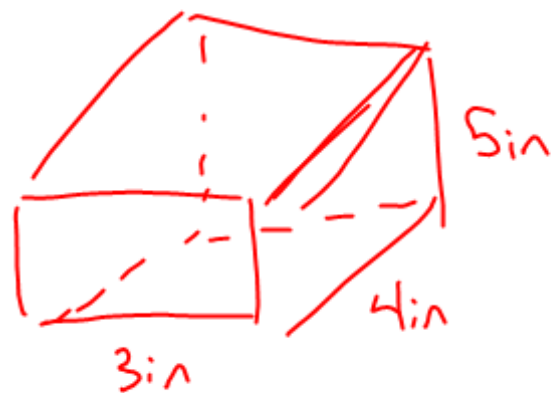
Ex: $x^2 + bx + 5$



Ex: $x^2 + 10$



$$\text{Area} = 12 \text{ in}^2$$



$$\text{Volume} = 60 \text{ in}^3$$

Ex. Classify the following polynomials based on
number of terms and degree.

$$3x^2 - 4x - 1$$

Quadratic

Trinomial

$$5x + 7$$

Linear

Binomial

$12x$

Linear

Monomial

$-8x^2$

Quadratic

Monomial

15

constant

monomial

Like Terms --- terms with the same **variables**

and the same **exponents** for these **variables**.

These variables and exponents are called **bases**.

The number in front of the variables is called

the **coefficient**.

Ex. List three different terms that would be considered "like" the term given.

1. $5x$ $3x$ $17x$ $-2x$ $-\frac{3}{2}x$

2. $-7x^2y$ $5x^2y$ $-2x^2y$ x^2y

3. -8 37 201 -24

❖ Part II: Writing Polynomials in Descending Order

- Write polynomial from **largest** exponent of the variable to the **smallest** exponent of the variable.

Standard Form

Ex. Write the following polynomials in **descending**
order.

4. $2x^2 - x^4 + 8 + 3x + 7x^6$

$7x^6 - x^4 + 2x^2 + 3x + 8$ ← constant

5. ~~$4x^5 + x^2 + 8 - 5x + 6x^3$~~

$$4x^5 + 6x^3 + x^2 - 5x + 8$$

6. $-3x + 4x^3 + 7x^2 - 9$

$$4x^3 + 7x^2 - 3x - 9$$

❖ Part III: Add and Subtract Polynomials

- Identify **like** terms
- Add or subtract the **coefficients** of the like terms keeping **exponents** the same.

Ex. Add or subtract.

$$7. \quad \underline{7x} + \underline{5y} + \underline{3} + \underline{12x} - \underline{8y} + \underline{2}$$

$$19x - 3y + 5$$

$$8. \quad \underline{3a} - \underline{9b} + \underline{6a} + \underline{11} - \underline{10b} - \underline{7}$$

$$9a - 19b + 4$$

Ex. Add or subtract. Write answers in
descending order.

9. $(\cancel{9x^2} - \cancel{7x} + \underline{1}) + (\cancel{6x} - \underline{5})$

$$9x^2 - x - 4$$

10. $(-\underline{3x^2} + \underline{14x}) + (\underline{8x^2} - \underline{2x} + \underline{4})$

$$5x^2 + 12x + 4$$

11.

$$(6x^2 + 2x - 7) - (4x^2 - 8x + 3)$$

$$\underline{6x^2} + \underline{2x} - 7 + \underline{-4x^2} + \underline{8x} - 3$$

$$2x^2 + 10x - 10$$

12.

$$(4x^2 - 10x + 7) + (-6x^2 + 18x - 20)$$

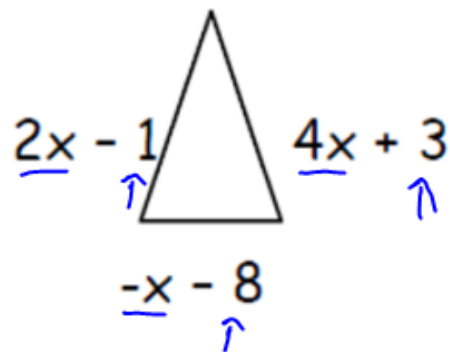
$$-2x^2 + 8x - 13$$

❖ Part IV: How do you find the **perimeter** of a triangle, square, or rectangle?

- You must have the measure of each **side** of the figure.
- To find perimeter, **add** the measures of **all** sides of the figure.
- When you add, remember to combine **like** terms.

Ex. Find the **perimeter** of each polygon.

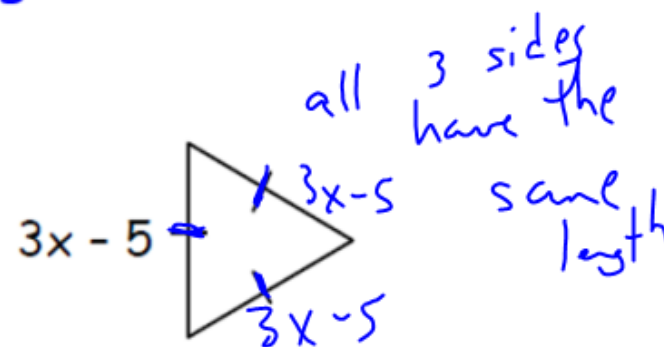
13.



$$2x + 4x - x - 1 - 8 + 3$$

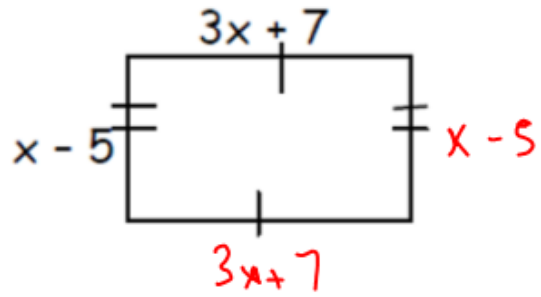
$$P = 5x - 6$$

14.



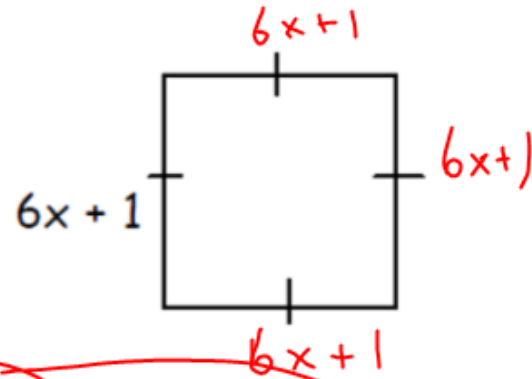
$$P = 9x - 15$$

15.



$$P = 8x + 4$$

16.



$$P = 24x + 4$$

HW#3:

Classify, Add,
Subtract
Polynomials