

Feb. 15, 2018

Warmup

$$a) \frac{(3^2 x^4 y^2)^3}{(3^{-2} x^5 y)^2}$$

$$= \frac{3^6 x^{12} y^6}{3^{-4} x^{10} y^2}$$

$$= \boxed{3^{10} x^2 y^4}$$

$$b) \ 3x^2 - 2x + 5 + 8x^2 + 5x + 10$$

combine like terms  
(bring terms together)

$$= 3x^2 + 8x^2 - 2x + 5x + 5 + 10$$

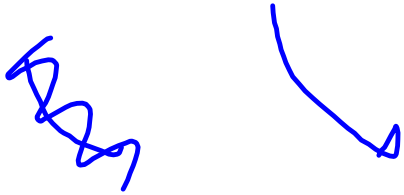
$$= 11x^2 + 3x + 15$$

$$c) 4x^2 + 5x - 3y + 6x^2 + \\ = 4x^2 + 6x^2 + 14x^2 + 5x + 7x$$

$$= \boxed{24x^2 + 9x + 5y + 1000}$$

$$7x - 2y + 14x^2 - 3x + 10y + 1000$$

$$-3x - 3y - 2y + 10y + 1000$$



$$(-3y) + (-2y)$$

# Communicating With Algebra

A big part of math is solving problems. Algebra is used to model real life situations.

The expression  $5x$  is called a term. The 5 is the coefficient and the  $x$  is the variable.

The degree is the sum of the exponents in a term.

Ex. 1 : State the degree of each polynomial:

a)  $\underbrace{x}_{\text{degree 1}} + \underbrace{3x^0}_{\text{degree 0}}$   
= degree 1

b)  $5x^4 - 3x$   
deg. 4      deg. 1  
= degree 4

c)  $8x^2y^4$   
= degree 6

$2x^2x^3x^4y$

$2x^9y^1$   
= degree 10



$$d) \underbrace{3x^3}_3 + \underbrace{2x^2}_2 + \underbrace{x}_1 + \underbrace{3y}_1$$

$$= \boxed{\text{degree } 3}$$

$$e) \underbrace{13x^2y^5z^1}_8 + \underbrace{2x^{10}}_{10}$$

$$= \boxed{\text{degree } 10}$$

Ex. 2: Write an expression

⊗ for each of the following:

a) \$ 5 per person

Let  $x$  = # of people

$$\boxed{5x}$$

b) \$ 10 km/h

Let  $x$  = # of hours

$$\boxed{10x}$$

Ex. 3: At the YMCA,  
the daily rate is \$8  
plus \$5 per adult, \$2 per  
child.

a) Write an expression that  
describes the daily cost.

Let  $C = \text{cost}$

$a = \# \text{ of adults}$

$k = \# \text{ of kids}$

$$8 + 5a + 2k = c$$

b) Mrs. Solinger brings 3 adults and 28 students to the YMCA. How much will this cost?

$$\text{set } a = 3, k = 28$$

$$8 + 5(3) + 2(28) = c$$

$$8 + 15 + 56 = c$$

$$\boxed{79 = c}$$

∴ This will cost \$79.

↑  
therefore

Ex. 4: To go to the movies, it costs a family \$5 plus \$11 per adult ticket, \$8 per child ticket and \$9 each snack.

a) Write an expression for the cost to go to the movies and explain each variable.

Let  $a = \#$  of adults  
 $c = \#$  of children  
 $s = \#$  of snacks  
 $t = \text{total cost}$

$$5 + 11a + 8c + 9s = t$$

b) At Spider-Man Homecoming, there were 158 adults, 38 children and 91 snacks. What is the total cost?

$$a = 158, c = 38, s = 91$$

$$5 + 11(158) + 8(38) + 9(91) = x$$

$$5 + 1738 + 304 + 819 = x$$

$$\boxed{2866 = x}$$

∴ the total cost is \$2866.

Ex. 5: Rogers charges

\$50 plus \$0.10/min for cell phones. Bell charges \$65 plus \$0.05/min. If Katelyn talks 100 min, which is the cheaper deal?

Let  $R$  = Rogers

$B$  = Bell

$m$  = minutes



$$R = 50 + 0.10m$$

$$\text{set } m = 100$$

$$R = 50 + 0.10(100)$$

$$50 + 10$$

$$\boxed{R = 60}$$

$$B = 65 + 0.05m$$

$$\text{Set } m = 100$$

$$B = 65 + 0.05(100)$$

$$= 65 + 5$$

$$\boxed{B = 70}$$

∴ Rogers is cheaper than

Bell by  $10.00$

HW p. 134

# 3, 6, 9, 10, 11, 12

p. 127  
# 7-9 } Tues

p. 152  
# 8, 9 } Wed

p. 158  
# 4, 5, 12a