5.2 Intro to Polynomials: Equivalent Expressions

Warm Up:

1. Determine

   i) the value of the coefficient
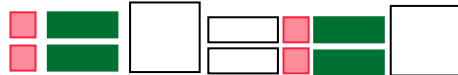
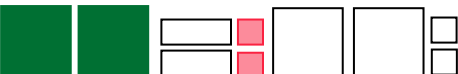   ii) the degree of each term

   a) $-t$ i) _____   ii) _____   b) $4d^2$ i) _____   ii) _____

   c) 12 i) _____   ii) _____   d) $-8de$ i) _____   ii) _____

   e) b i) _____   ii) _____   f) $-c^2$ i) _____   ii) _____

2. Match the expression with its description by placing the correct letter in the blank.
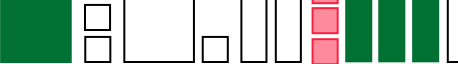
   A) $-4x$ B) 17 _____ a monomial with a degree of 2   _____ -4 is the coefficient

   C) $2ab$ D) $3y^2 - 2y$ _____ a binomial with two variables   _____ -1 is the coefficient

   E) $-m$ F) $5x - 3y$ _____ a binomial with a degree of 2   _____ a constant

3. Write a polynomial for each of the expressions modeled by the algebra tiles then simplify by removing the zero pairs.

a) = _____

b) = _____

c) = _____

d) = _____

"**Like terms**" = terms that differ only by their numerical coefficients. Examples of like terms are:

   a) 2y and 5y: both have a variable of *y* with an exponent of 1

   b) 3x^2 and –2x^2 : each of them has a variable *x* with an exponent of 2

   c) 2xy and 5yx: both have variables *x and y*, each with an exponent of 1

3.   Circle the like terms in each group.

   a) **4x, 4y, x^2, –x, y^2**   b) **6, 2x, –2.5, 3y, –0.1**

   c) **a, 4b, –3ab, 7a, 1.5a**   d) **–f, 3ef, f^2, –6f^2, 5e**

   e) **6st, –10s, $\frac{3}{4}$ st , –st, t**   f) **pq, –0.6p^2, 5q, –p^2, 10p^2**

   g) **0.5jk, –jk, j^2, 6jk, –k**   h) **$\frac{2}{5}$, $\frac{1}{2}$ r, 0.12, r^2, 9**

4. Collect like terms.

a) $3m - m^2 - 6 + 3m^2$

_____

b) $-4k - k^2 + 5k - 7k^2 + 8$

_____

c) $-c - c^2 + 3c + c^2$

_____

d) $7 - 10 + 5mn - nm + 9 + 8nm$

_____

e) $-2b^2 - 7b + 3b^2 - 8b + b$

_____

f) $w^2 - 3w - 8w^2 + 7w^2 + 10w$

_____

g) $-2ab - 1 - ab - 7 - 5ba$

_____

h) $3s + 6 - 6s^2 - 8 + 7s - 2s^2$

_____

5. Write a polynomial with the given degree and number of terms.

a) degree 1, with two terms _____

b) degree 0, with 1 term _____

c) degree 2, with 3 terms including a constant term 5 _____

d) degree 2, with 1 term_____

6. A rectangle's length is 7 cm greater than its width, *w*.

a) Draw the rectangle and label its dimensions.

b) Write the expression to find its perimeter.

c) Collect like terms.

6. The cost of publishing the school yearbook was $440. The yearbook committee priced the yearbook at $8.

a) Write an expression that represents the profit, *p*, for the number of yearbooks sold, *n*.

b) How many yearbooks need to be sold for the yearbook committee to break even?