5. Add and Subtract Polynomials Review

1. For the polynomial $4x^2 - 2$
   a) number of terms
   b) coefficient of first term
   c) number of variables
   d) degree of polynomial
   e) constant term
   f) kind of polynomial

2. For the polynomial $3x^2 - 2x + 1$
   a) number of terms
   b) coefficient of second term
   c) number of variables
   d) degree of polynomial
   e) constant term
   f) kind of polynomial

3. Sketch a model that represents the polynomial:
   a) $x^2 + 2x - 3$

   b) $-x^2 - x + 1$

4. Create a polynomial that satisfies **ALL** of the following conditions:
   i) contains 2 variables
   ii) has 3 terms
   iii) is of degree 4
   iv) constant term is 7

5. Use the given variables to write each statement as an algebraic expression.

   a) If n is a number, the product of a number and 8.
   b) If n is a number, the result is 3 times the number decreased by 21.
   c) If w is the width of a rectangle and its length is 3 cm more than its width, the area of the rectangle.

6. Collect like terms.

   a) $4x - 2x^2 + x - 3x^2$

   b) $7t + 14 + 6t - 5 - 3t^2 + 4t^2$

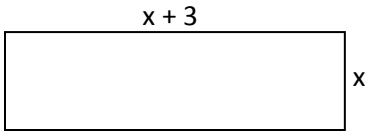
   c) $g^2 - 3g + 4g^2 + 2g$

   d) $-1 - 4w^2 - 2w + w^2 - 3 + 5w$

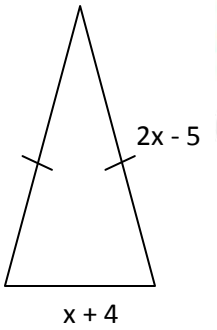
   e) $3h^2 + 4 - 6h^2 - 6 + 3h - 5 + 2h$

7. Write and simplify an expression for the perimeter of the following shapes.

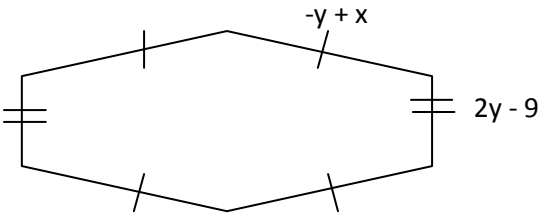
   a)



   b)

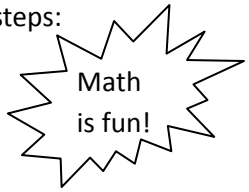


   c)



8. Add the following in two steps:

- Rearrange
- Collect



a) $(6x + 3) + (2x + 8)$

b) $(6 – 3x) + (-3 – 2x)$

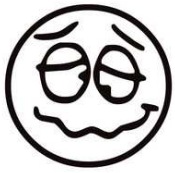
c) $(3x^2 – 7x + 5) + (6x – 6x^2 + 8)$

9. Subtract the following. Remember to change to an addition question.

a) $(3p + 7) – (-2p – 2)$

b) $(-3u + 5) – (4u + 3)$

c) $(4 – 5r) – (-7r + 3)$

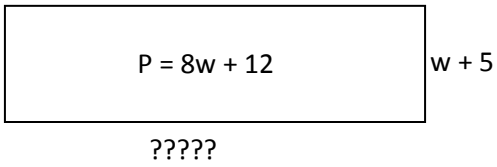


d) $(-4m^2 – 3m – 11) – (m^2 – 4m – 15)$

e) $(1 – 3t + t^2) – (4t + 5 – 3t^2)$

10. The perimeter of each polygon is given. Find the length of the unknown side.

a)



b)