# Curriculum Outcome

☑ **(PR 5)Demonstrate an understanding of polynomials (limited to of degree less than or equal to 2).**

☑ **(PR 6) Model, record and explain the operations of addition and subtraction of polynomial expressions, concretely, pictorially and symbolically (limited to polynomials of degree less than or equal to 2).**

☐ **(PR 7) Model, record and explain the operations of multiplication and division of polynomial expressions (limited to polynomials of degree less than or equal to 2) by monomials, concretely, pictorially and symbolically.**

Student Friendly:
"Collecting like terms "
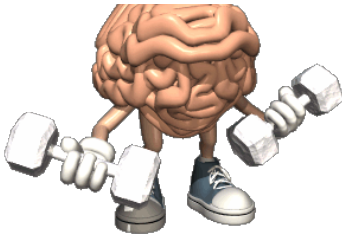
1) Classify the following as either monomials, binomial, trinomials or not a polynomials

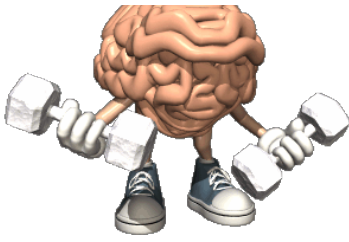| $3x^2 + 6y$	$\dfrac{4x^7}{z}$	$9x$	$2x^2 - 5x - 1$
Binomial	Not polynomial	Monomial	Trinomial

2) What is the degree of the following polynomial?

$$13x^7 - 11x^{12} + 8x^9 - 9x^{11} - 5$$

Degree of 12

3) Rewrite the above in decending order

$$-11x^{12} - 9x^{11} + 8x^9 + 13x^7 - 5$$

Copy warm-ups into your notebooks

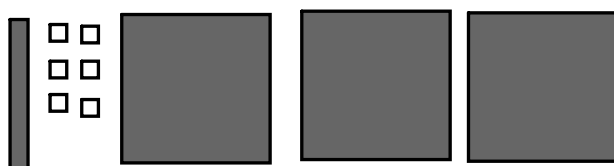**4) Fill in the following**

a) $-4x^6 - 7x^4 + 12$

Variables: x

Coefficients: $-4, -7$

Constants: 12

Degree: 6

b) $5x^2 + 6y$

Variables: x, y

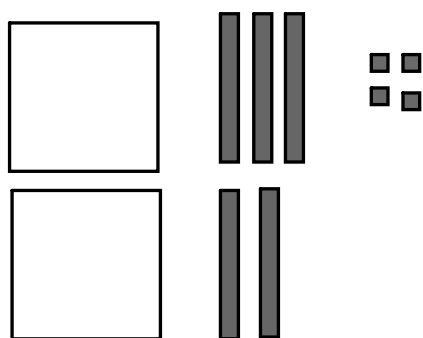Coefficients: $5, 6$

Constants: $\emptyset$

Degree: 2

5) Write the polynomial for the following algebra tiles.

-3x^2 - x + 6

6) Model the following Polynomial

$-5x + 2x^2 - 4$

Section 5.2
Like Terms & Unlike Terms

What do you notice about each pair of numbers?

-1, 1

Hint:
What happens when you add them?

-2, 2

-100, 100

-15, 15

What do you think happens when a "x^2" tile and a "$-x^2$" tile combine?
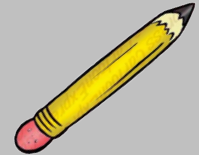
They form a zero pair

Answer

TILES

Like Terms:

are algebra tiles with the same shape and size (Don't worry about colour ⟶ signs)

Here is a collection of tiles, lets group them together into "like terms".

Always collect like terms

Once you collected like terms you have to simplify the tiles

HOW????
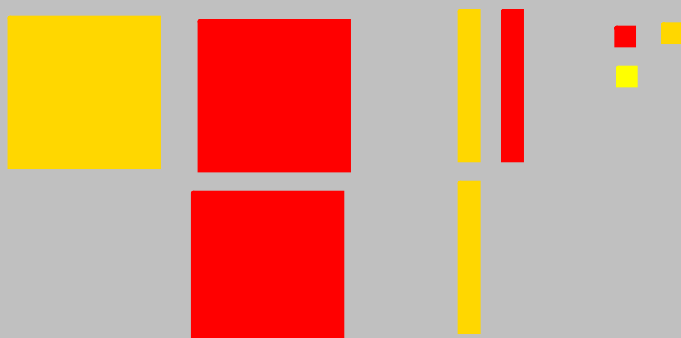Remove the "zero pairs"

Copy what is left over

You try

Collect like terms and then simplify

(Like question 8 in the textbook)

_____

_____

Collect like term and cross out zero pairs

_____

Copy what's left

Polynomial Expressions

Like terms are -3x^2 and 4x^2
(same letter with the same numerical exponent)

Unlike Terms are -x^2 and x   or   are y^2 and t^2

(either different letters and/or different numerical exponent)

Simplified Form
   *fewest algebra tiles possible or the fewest terms as possible
   *contains only one term of each degree and no terms with a zero coefficient

   Always simplify any polynomial by grouping like terms.

Collect like terms and then simplify

$$-3x + 2x^2 -7 + 10x + 5 - 4x^2$$

$$2x^2 - 4x^2 \quad -3x + 10x \quad -7 + 5$$

$$-2x^2 \quad + 7x - \quad 2$$

Collect like terms and then simplify

$$4y + 8 + y + 7$$

$$4y + y \ + 8 + 7$$

$$5y \ + 15$$

Collect like terms and then simplify

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

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

$$3x^3 - 7x^2 + 9$$
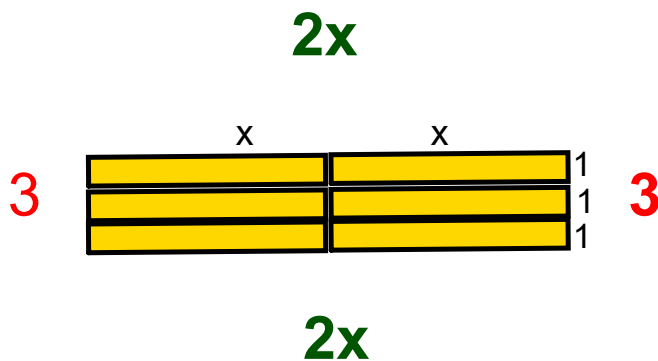
Collect like terms and then simplify

$$-2 + 3x^2 + 2x - 3x^2 - 7x + 5$$

$$3x^2 - 3x^2 + 2x - 7x - 2 + 5$$

$$- 5x + 3$$

Perimeter - is the distance around an object
        - to calculate you add the length of each side

Write a polynomial to represent the perimeter of each rectangle.

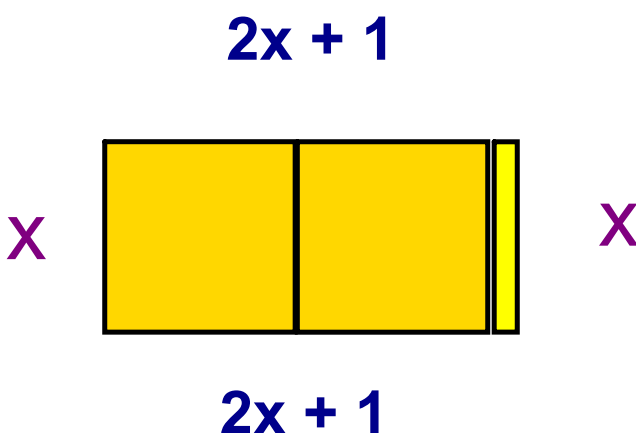**2x**

x   x

3   ¹ ¹ ¹   3

2x

P = Side + Side + Side + Side

P = 2x + 3 + 2x + 3

P= 2x + 2x + 3 +3

P = 4x + 6

Example 2)

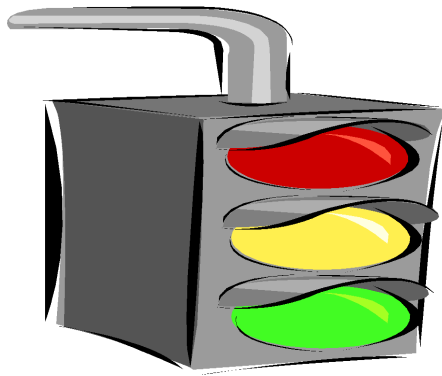**Write a polynomial to represent the perimeter of each rectangle.**
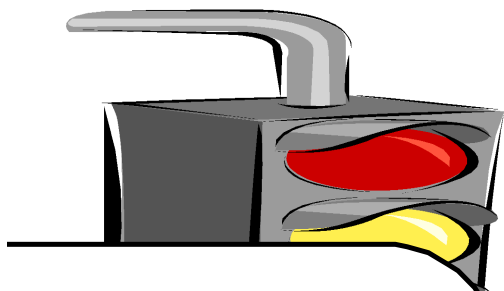
2x + 1

X   X

2x + 1

P = Side + Side + Side + Side

P = (2x + 1) + (x)+ (2x + 1) + (x)

P= 2x + 2x + x + x + 1 + 1

P = 6x + 2

Now it is time for Home Learning

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QUESTIONS

6, 7,

8 (write the simplified expression...You don't have to draw them out)

9, 11ace, 12ace, 13bdf, 14bdf, 19, 20abc, 22

Attachments

Course Outline Grade 9 2010-2011 Second Semester.docx