

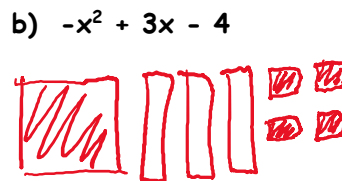
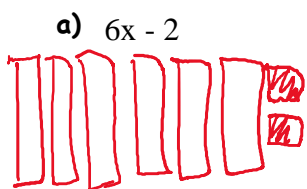
LEARNING OUTCOME: 5A: I can recognize the different parts of a polynomial.
5B: I can describe and classify polynomials.

1. Which description on the right describes each expression on the left. (some may have two descriptions)

- | | | | | |
|-----|------------------|-------------------|----|--|
| (a) | $-4x + 2$ | <u>D, B, H</u> | A. | monomial |
| (b) | $\frac{2}{x}$ | <u>E</u> | B. | binomial |
| (c) | y^2 | <u>A</u> | C. | trinomial |
| (d) | $-5x^2$ | <u>A</u> | D. | polynomial with a coefficient of -4 |
| (e) | $x^2 - 3x + 5$ | <u>G, H, C</u> | E. | non-polynomial |
| (f) | $-4x^2 + 2x + 3$ | <u>G, H, C, D</u> | F. | polynomial of degree higher than 2 |
| (g) | $6 - 4x^4$ | <u>H, B, D, F</u> | G. | polynomial written in descending power |
| | | | H. | Has a constant term. |

LEARNING OUTCOME: 5C: I can use algebra tiles to represent a polynomial

2) Represent the following using algebra tiles.



LEARNING OUTCOME: 5D: I can simplify polynomials by combining like terms.

3. Simplify each of the following.

(a) $2x - 3 - x + 2$
 $= x - 1$

(c) $-2x^2 - 5 + 2x + x^2 - 3 - x$
 $= -x^2 + x - 8$

(b) $2x^2 + x - x^2 - x$
 $= x^2$

(d) $10m^2 + 6m - 2m^2 - 3 - 6m + 3$
 $= 8m^2$

LEARNING OUTCOME: 5E: I can add polynomials.

4. Add the following polynomials.

$$\begin{array}{l} \text{(a)} \quad (2x-3)+(-4x+1) \\ \quad \quad = 2x-3-4x+1 \\ \quad \quad = -2x-2 \end{array} \quad \begin{array}{l} \text{(b)} \quad (x^2-2)+(x^2+2) \\ \quad \quad = x^2-2+x^2+2 \\ \quad \quad = 2x^2 \end{array} \quad \begin{array}{l} \text{(c)} \quad (-2xy+x^2-3y^2)+(-y^2-xy+2x^2) \\ \quad \quad = -2xy+x^2-3y^2-y^2-xy+2x^2 \\ \quad \quad = 3x^2-3xy-4y^2 \end{array}$$

LEARNING OUTCOME: 5F: I can subtract polynomials. Simplify each of the following.

5. Subtract the following polynomials.

$$\text{(a)} \quad (2x+3)-(5x+4) = -3x-1$$

$$\text{(b)} \quad (4-8w)-(7w+1) = -15w+3$$

$$\text{(c)} \quad (x^2+2x-4)-(4x^2+2x-2) = -3x^2-2$$

$$\text{(d)} \quad (-9z^2-z-2)-(3z^2-z-3) = -12z^2+1$$

LEARNING OUTCOME: 5G: I can multiply a polynomial by a monomial

6. Multiply the following polynomials.

$$\text{a)} \quad 3(4n-5) = 12n-15$$

$$\text{b)} \quad 3n(4n-5) = 12n^2-15n$$

$$\text{c)} \quad -2(4t-8) = -8t+16$$

$$\text{d)} \quad -2t(4t-8) = -8t^2+16t$$

LEARNING OUTCOME: 5I: I can divide a polynomial by a monomial.

7. Divide the following polynomials algebraically.

$$\frac{4x^2+8x+16}{4} = x^2+2x+4$$

$$\frac{5x^3-10x^2+25x}{5x} = x^2-2x+5$$

CURRICULAR COMPETENCIES QUESTIONS!!

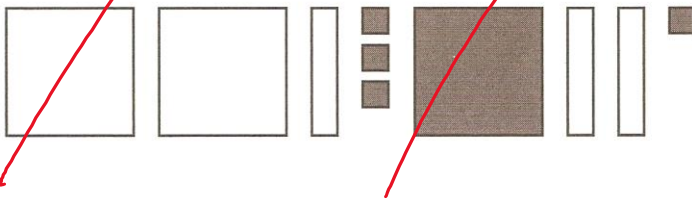
8. Write a polynomial expression for the following algebra tiles. Then simplify.

a)



$$\underline{-x^2 - x + 1}$$

b)



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

9. Mr. H's cellphone plan costs \$60 per month plus \$0.05 per text message sent.

a) Write an expression for the monthly cost of the cellphone plan. State what your variable represents.

$$C = 0.05t + 60 \quad t = \text{number of text messages.}$$

$C = \text{monthly cost}$

b) What type of polynomial is your expression, and what is its degree?

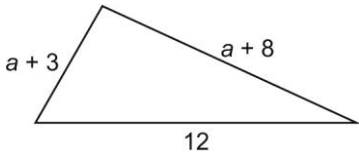
It's a binomial with a degree of one.

c) How would you modify your polynomial to represent the AVERAGE COST of each text sent?

Simply divide the monthly cost by number of texts.

$$\text{Average Cost} = \frac{0.05t + 60}{t}$$

10. Determine an expression for the perimeter in simplified form.



$$P = (a+3) + (a+8) + 12$$
$$= 2a + 23$$

11. Write an expression that represents the area or perimeter of the following figures.

- a) The perimeter of a rectangle with length $7x - 3$ and width $4x + 5$

$$P = 2[(7x-3) + (4x+5)]$$
$$= 2[11x+2] = \boxed{22x+4}$$

- b) The area of a triangle with base $6x$ and height $10x + 3$

$$A = \frac{b \times h}{2} = \frac{(6x)(10x+3)}{2}$$
$$= \frac{60x^2 + 18x}{2} = \boxed{30x^2 + 9x}$$