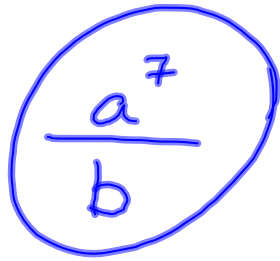


Warm-Up:

Simplify.

1)  $\frac{(a^3)(b^{-2})(a^4)}{b^{-1}}$


$$\frac{a^7}{b}$$

Determine if the following expression is a polynomial. If so, label it as a *monomial*, *binomial*, or *trinomial*.

2)  $43n^4 - 1$  binomial

3)  $\frac{7xy}{w}$  not a polynomial

20)



$$\frac{1}{2}bh - \pi r^2$$

$$\frac{1}{2}xy - \pi r^2$$

## Section 7-4: Adding and Subtracting Polynomials

To add and subtract polynomials, combine like terms.

Examples:

Simplify.

1)  $(2x^2 + 3x - 2) + (x^2 - 2x - 4)$

$$\begin{array}{r} 2x^2 + 3x - 2 \\ + x^2 - 2x - 4 \\ \hline \end{array}$$

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

2)  $(x^2 + 4x - 3) + (x^2 - x + 5)$

$$\begin{array}{r} x^2 + 4x - 3 \\ + x^2 - x + 5 \\ \hline \end{array}$$

$$2x^2 + 3x + 2$$

Examples:

Simplify.

$$3) (2x^2 + 5x + 4) - (x^2 + 2x - 1)$$

$$-x^2 - 2x + 1$$

$$x^2 + 3x + 5$$

$$4) (3v^3 + 4v + 12) - (v^2 - 3v + 9)$$

$$-v^2 + 3v - 9$$

$$3v^3 - v^2 + 7v + 3$$

Examples:

Simplify.

$$5) (7y^2 + 2y - 3) + (2 - 4y + 5y^2)$$

$$+5y^2 - 4y + 2$$

$$12y^2 - 2y - 1$$

$$6) (6y^2 + 8y^4 - 5y) - (9y^4 - 7y + 2y^2)$$

$$-2y^2 - 9y^4 + 7y$$

$$4y^2 - y^4 + 2y$$

Examples:

7) The total amount of toy sales  $S$  (in billions of dollars) consists of two groups: sales of video games  $V$  and sales of traditional toys  $T$ . In recent years, the sales of traditional toys and total sales could be modeled by the following equations, where  $n$  is the number of years since 1996.

$$T = 0.5n^3 - 1.9n^2 + 3n + 19$$
$$S = 0.45n^3 - 1.85n^2 + 4.4n + 22.6$$

$$V = S - T$$

a) Find an equation that models the video game sales  $V$ .

$$\begin{array}{r} 0.45n^3 - 1.85n^2 + 4.4n + 22.6 \\ - 0.5n^3 + 1.9n^2 - 3n - 19 \\ \hline -0.05n^3 + 0.05n^2 + 1.4n + 3.6 \end{array}$$

b) What did this equation predict for the amount of video game sales in the year 1998?

$$\begin{array}{r} -0.05(2)^3 + 0.05(2)^2 + 1.4(2) + 3.6 \\ -0.4 + 0.2 + 2.8 + 3.6 \end{array}$$

$$\$6.2 \text{ billion}$$

Homework: pg. 386-389 #12-28 even, 34, 42