

Name:

Date:

Period:

Multiplying a Monomial by a Polynomial	Multiplying a Binomial by a Binomial	Multiplying any other polynomials
Distribute – make sure to multiply the outside monomial by each of the terms inside the parenthesis.	First Double Distribute - make Outside OR sure to multiply each of Inside the terms in an Last organized fashion.	Distribute – make sure to multiply each of the terms in an organized fashion.
	Combine “like” terms	Combine “like” terms

Don't forget to add exponents of like bases when multiplying!

Example:

$$4x(2x + 8)$$

$$8x^2 + 32x$$

Example:

$$(x + 5)(x - 7)$$

$$x^2 - 7x - 35$$

$$+ 5x$$

$$x^2 - 2x - 35$$

Example:

$$(x - 4)(x^2 + 3x - 6)$$

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

$$\underline{-4x^2 - 12x + 24}$$

$$x^3 - 1x^2 - 18x + 24$$

Now you try:

$$9x(6x - 4)$$

$$(x - 8)(x + 3)$$

$$(x^2 - 3)(x^2 + 7x + 4)$$

Dividing a Polynomial by a Monomial

Make sure to divide EACH term by the monomial.
Don't forget the "1" if necessary!!

Example:

$$\frac{6x + 9}{3} \Rightarrow \begin{array}{cc} \frac{6x}{3} & + & \frac{9}{3} \\ \downarrow & & \downarrow \\ 2x & + & 3 \end{array}$$

Example:

$$\frac{18x^2 - 50}{2} \Rightarrow \begin{array}{cc} \frac{18x^2}{2} & - & \frac{50}{2} \\ \downarrow & & \downarrow \\ 9x^2 & - & 25 \end{array}$$

Example:

$$\frac{12x^2 + 20x}{4x} \Rightarrow \begin{array}{cc} \frac{12x^2}{4x} & + & \frac{20x}{4x} \\ \downarrow & & \downarrow \\ 3x & + & 5 \end{array}$$

Example:

$$\frac{16a^3 + 8a^2 - 4a}{4a} \Rightarrow \begin{array}{ccc} \frac{16a^3}{4a} & + & \frac{8a^2}{4a} & - & \frac{4a}{4a} \\ \downarrow & & \downarrow & & \downarrow \\ 4a^2 & + & 2a & - & 1 \end{array}$$

Example:

$$\frac{21ab^3 + 14a^2b + 35a^4}{7a} \Rightarrow \begin{array}{ccc} \frac{21ab^3}{7a} & + & \frac{14a^2b}{7a} & + & \frac{35a^4}{7a} \\ \downarrow & & \downarrow & & \downarrow \\ 3b^3 & + & 2ab & + & 5a^3 \end{array}$$

Example:

$$\frac{45a^2b^4 - 60a^3b^2 - 15a^2b}{15a^2b} \Rightarrow \begin{array}{ccc} \frac{45a^2b^4}{15a^2b} & - & \frac{60a^3b^2}{15a^2b} & - & \frac{15a^2b}{15a^2b} \\ \downarrow & & \downarrow & & \downarrow \\ 3b^3 & - & 4ab & - & 1 \end{array}$$

Now you try:

1.
$$\frac{20x^3 + 5x^2}{5x}$$

2.
$$\frac{u^2v + uv^2}{uv}$$

3.
$$\frac{-10u^3v^2 + 5u^2v^5}{-5u^2v}$$

4.
$$\frac{2a^3b - 6a^2b^2 + 16ab^3}{-2ab}$$

5.
$$\frac{15a^5b^4 + 3a^4b^5 - 6a^3b^6}{3a^2b^3}$$