

$$1. (3x^2 - 14x + 8) - (10x^2 + 7x - 15)$$

$$\begin{array}{r} \textcircled{3x^2} - 14x + 8 - \textcircled{10x^2} - 7x + 15 \\ \hline -7x^2 - 21x + 23 \end{array}$$

$$2. -5x^2(-3x^3 + 12x^2 - x)$$

$$15x^5 - 60x^4 + 5x^3$$

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

$$\begin{array}{r} (-4x^2 - 5x)(-4x^2 - 5x) \\ -4x^2 - 5x \end{array}$$

$-4x^2$	$16x^4$	$20x^3$
$-5x$	$20x^3$	$25x^2$

$$16x^4 + 40x^3 + 25x^2$$

Raising Exponents to a Power

Zero Exponent: Any term to the zero power is ONE

Rule: MULTIPLY the exponents by each other

Examples:

$$(xy^5)^3 = x^3y^{15}$$

$$(x^3)^4 = x^{12}$$

$$(2x^3y^2)^4 = 16x^{12}y^8$$

$$(x^3y)^2(xyz)^3$$
$$(x^6y^2)(x^3y^3z^3)$$

x^9	y^5	z^3
x	y	z

$$(-3rs^3t^4)^2 = 9r^2s^6t^8$$

$$(15x^{12}y^{15}z^{20})^0$$

1

$$(2x^2)^3$$

$$8x^6$$

$$(3xy^5)^4$$

$$81x^4y^{20}$$

$$(-6rs^7t^5)^3$$

$$-216r^3s^{21}t^{15}$$

$$(xy^7)^8$$

$$x^8y^{56}$$

$$-7(x^4y^2z)^6$$

$$-7x^{24}y^{12}z^6$$

$$(rs^3t^4)^2(2rst)^3$$

$$(r^2s^6t^8)(8r^3s^3t^3)$$

$$8r^5s^9t^{11}$$

$$(-12ab^{10}c^{25}d^{13})^0$$

1

Extra Practice!!!

$$(ab^2)(a^3b)$$

$$a^4b^3$$

$$(a^2b^3)^3$$

$$a^6b^9$$

$$\begin{aligned} & (-7x^2y^3)^2(4xy)^2 \\ & (49x^4y^6)(16x^2y^2) \\ & \boxed{784x^6y^8} \end{aligned}$$

$$\begin{aligned} & (-7x^2y^2)^2 \\ & 49x^4y^4 \end{aligned}$$

$$(10xy^5z^3)(3x^4y^6z^3)$$

$$30x^5y^{11}z^6$$

$$(5xy)^2(-2x^2y^3)^3$$

$$(25x^2y^2)(-8x^6y^9)$$

$$\boxed{-200x^8y^{11}}$$

$$(2m^2n^3)(3m^3n)$$

$$(6m^5n^4)$$

$$(2m^2n^3)^3(3m^3n)^4$$

$$(8m^6n^9)(81m^{12}n^4)$$

$$(648m^{18}n^{13})$$