

1.) Solve the systems of equations using the best method

$$\begin{aligned}y - 2x &= 3 \\ 3x - 2y &= 5\end{aligned}$$

2.) A. Simplify: $(3x^2 + x - 4) - (8x - 1 + x^2)$

B. Simplify: $(3x^2 + x - 4) + (8x - 1 + x^2)$

3.) Write the equation of a line perpendicular to $x - 4y = 8$ that pass through the point $(-1, 2)$.

$$X = X^1$$

Multiplying Monomials

Multiply big then
add little

- **Step 1:** Multiply the coefficients.
- **Step 2:** Add the exponents

PRODUCT RULE:

$$(x^a)(x^b) = x^{a+b}$$

1. $x^2 \cdot x^3$ $x^{2+3} = x^5$	2. $a^9 \cdot a$ $a^{9+1} = a^{10}$	3. $(4x^2) \cdot (3x^5)$ $12x^7$
4. $(3x^6)(5x^2)$ $15x^8$	5. $5x^2 \cdot 6x^4$ $30x^6$	6. $(-4a^3b)(3a^2b^5)$ $-12a^5b^6$

$$\begin{aligned} & -4 \cdot a \cdot a \cdot a \cdot b \\ & -3 \cdot a \cdot a \cdot b \cdot b \cdot b \cdot b \cdot b \end{aligned}$$

7. $(8x^4y^2)(-3x^4y^9)$

$$-24x^8y^{11}$$

8. $2y \cdot -5y^2 \cdot 3y^3$

$$-30y^6$$

9. $(-2xy)(xy)(3x^2y^3)$

$$-6x^4y^5$$

$$-2 \cdot 1 \cdot 3$$

10. $(6m)(7m^2n)(n^4)$

$$42m^3n^5$$

11. $8c^2d \cdot 10c^3d^5$

$$80c^5d^6$$

12. $-4(rs^2)(-5r^4s)$

$$20r^5s^3$$

Challenge - With Fractions!

13. $(\underline{-6a^2b}) \cdot (\underline{\frac{1}{2}ab})$

$$\underline{-3a^3b^2}$$

14. $\underline{12y} \cdot (\underline{\frac{2}{3}xy^4})$

$$\frac{12 \cdot 2}{3} = 8$$
$$8xy^5$$

15. $\frac{1}{4}(8mn) \cdot (-6m^2n^2)$

$$\frac{1 \cdot 8 \cdot -6}{4} = -12$$
$$-12m^3n^3$$

Adding, Subtracting, and Multiplying

<p>16. $(2x^5y^2)(4xy^3) + (x^4y^4)(3x^2y)$</p> <p>$8x^6y^5 + 3x^6y^5$</p> <p>$11x^6y^5$</p>	<p>17. $(4a^3b^4)(5ab^2) + (a^2b^5)(-2a^2b)$</p>
<p>18. $19m^8n^8 - (4m^5n)(3m^3n^7)$</p> <p>$19m^8n^8 - 12m^8n^8$</p> <p>$7m^8n^8$</p>	<p>19. $(-5cd)(-3c^4d) - (7c^2d^2)(2c^3)$</p>

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Multiplying a Monomial by a Polynomial

$$2x(3x + 1)$$

What property will you use to simplify this expression? distributive!

What operation did you perform on the exponents?

$$2x(3x+1)$$

$2x \cdot 3x = 6x^2$

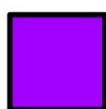
$2x \cdot 1 = 2x$

$6x^2 + 2x$

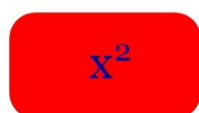
Use the tiles below to simplify the expression.



x

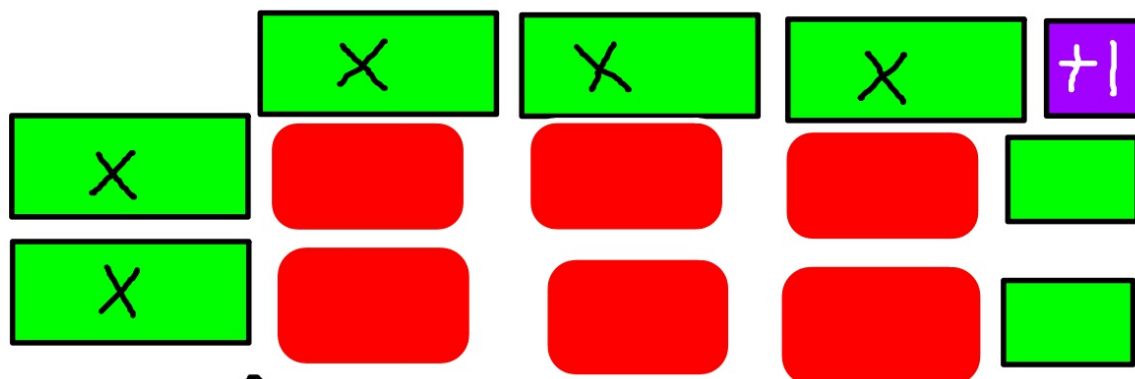


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x^2

$2x(3x + 1)$



$6x^2 + 2x$

What is a simpler form of $-x^3(9x^4 - 2x^3 + 7)$?

~~A.) $-9x^{12} + 2x^9 - 7x^3$~~

~~B.) $9x^7 - 2x^6 + 7x^3$~~

~~C.) $-9x^7 - 2x^3 + 7$~~

D.) $-9x^7 + 2x^6 - 7x^3$

$$\begin{aligned} -x^3 \cdot 9x^4 &= -9x^7 \\ -x^3 \cdot -2x^3 &= 2x^6 \\ -x^3 \cdot 7 &= -7x^3 \end{aligned}$$

Classwork: HW #2 Monomial x Polynomial

Answers listed below in no particular order.

$$-11c^2 - 4c$$

$$2y^2 - 8y$$

$$6x^2 + 8x$$

$$5z^2 - 5z$$

$$2x^2 - 5x$$

$$28x^2 - 6x - 12$$

$$20a^3 - 7a$$

$$4a^2 + 3a$$

$$-4y^3 - y^2$$

$$6n^4 - 6n^3 - 12n^2$$

$$12h^2 - 20h$$

$$-3n^3 - 6n^2$$

$$3w^2 + 7w$$

$$6x^3 - 3x^2 + 8x$$

$$7c^4 - 14c^3 + 35c$$

$$12n^3 + 5n^2 - 19n$$

$$18b^2 + 2b + 8$$

$$15x^3 - 3x^2 + 12x$$

$$x^3 - 2x^2 - 10x$$

$$6m^2 + 6m - 3$$

Name _____ Block _____ Date _____

Classify the polynomials by degree and number of terms.

1.) $2x^3 + 5x^2 - 4x + 7$

2.) $4x^2 - 2x$

Add or subtract the following polynomials.

3.) $(18x - 2x^2 + 15) + (3x^2 - 10 - 8x)$

4.) $(6x^2 + 7x) - (10x + 3x^2 + 2)$