

Warm Up

Please copy and complete

Simplify each of the following:

1) $2x^3 - 5x + 7 + 6x^3 + x + 1$

2) $-7n^3y - 5n^2y^3 + 2ny^2 - n^2y^3 - n^3y - 12ny^2$



Warm Up

Please copy and complete

Simplify each of the following:

$$1) 2x^3 - 5x + 7 + 6x^3 + x + 1$$

$$2x^3 + 6x^3 - 5x + x + 7 + 1$$

$$8x^3 - 4x + 8$$

$$2) -7n^3y - 5n^2y^3 + 2ny^2 - n^2y^3 - n^3y - 12ny^2$$

$$-7n^3y - n^3y - 5n^2y^3 - n^2y^3 + 2ny^2 - 12ny^2$$

$$-8n^3y - 6n^2y^3 - 10ny^2$$



Extended

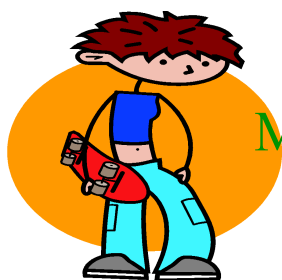
Distributing Factor

Multiplying Polynomials

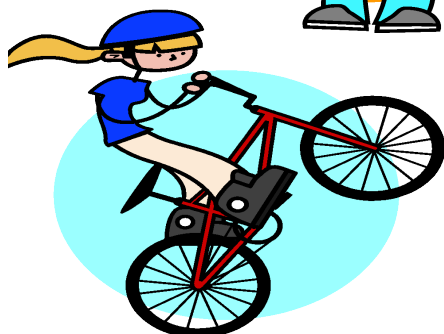
Expand & Simplify

Rainbow





Monomial 1 term



Binomial 2 terms



Trinomial 3 terms

How are terms separated?????



Terms are separated by “+” and “-“ signs.

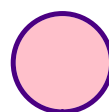




How many terms?

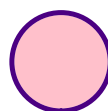
$$4x - 5y + q$$

3



$$5(x - 3y)$$

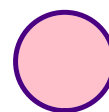
2



$$5x - 15y$$

$$\frac{3x - 4}{5}$$

2



Bonus: How many terms?

$$3x + 4y - 5x - 2y + x$$

$$\begin{array}{l} 3x - 5x + x + 4y - 2y \\ -x + 2y \end{array}$$



Expand and collect like terms.

$$4(\overbrace{x}^{\text{red}} - \overbrace{2}^{\text{red}}) - 2(\overbrace{x}^{\text{blue}} + \overbrace{3}^{\text{blue}})$$

$$4x - 8 - 2x - 6$$

$$4x - 2x - 8 - 6$$

$$\boxed{2x - 14}$$

A diagram illustrating the expansion of the expression $2x(x^3 - 5x^2 - x - 5)$. The expression is written with four terms inside the parentheses: x^3 , $-5x^2$, $-x$, and -5 . Colored arrows show the multiplication process: a red arrow from $2x$ to x^3 , a green arrow from $2x$ to $-5x^2$, a blue arrow from $2x$ to $-x$, and a purple arrow from $2x$ to -5 . The result of each multiplication is written below the corresponding term in the same color.

$$2x^4 - 10x^3 - 2x^2 - 10x$$

$$4(3xy + 7x - 5) - 3(2x + 5xy - 1)$$

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

$$-8x^2 + 6x + 20x - 15$$

$$-8x^2 + 26x - 15$$

$(7x - 2z)(3x - 4z)$

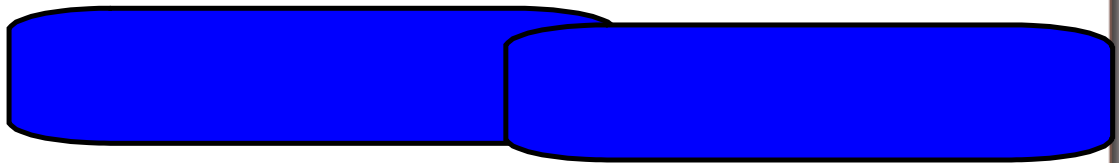
$$21x^2 - 28xz - 6xz + 8z^2$$

$$21x^2 - 34xz + 8z^2$$

15. Expand and simplify.



a) $(3s + 5)(2s + 2) + (3s + 7)(s + 6)$



b) $(2x + 3)(5x + 4) + (x - 4)(3x - 7)$

$$(13x^2 + 4x + 40)$$

3.7 Multiplying Polynomials

$$\begin{aligned} \text{a) } & (3s + 5)(2s + 2) + (3s + 7)(s + 6) \\ & 6s^2 + 6s + 10s + 10 + 3s^2 + 18s + 7s + 42 \\ & (6s^2 + 16s + 10) + (3s^2 + 25s + 42) \\ & 6s^2 + 3s^2 + 16s + 25s + 10 + 42 \\ & \boxed{9s^2 + 41s + 52} \end{aligned}$$