

# Warm Up

Mar 22

Quiz Tuesday  
Mar. 27

Factor each of the following:

$$1) 3x^4 - 15x^2 + 24x$$

$$3x' (1x^2 - 5x' + 8)$$

$$3) -21rt - 49r^4 - 35r^3t$$

$$7r' (-3t - 7r^2 - 5r^2t)$$

or

$$-7r' (3t + 7r^2 + 5r^2t)$$

$$\begin{matrix} 1x18 \\ 2x9 \end{matrix}$$

$$2) 18a^3b^6 + 27ab^2 - 36ab$$

$$9a'b' (2a^2b^5 + 3b' - 4)$$

$$4) 6xy^2 + 7x^2y + 2y$$

$$y' (6xy' + 7x^2 + 2)$$

Simplify then Factor:

$$1) \underline{2x^3} - \underline{5x + 7} + \underline{6x^3} + \underline{x + 1}$$

collect like terms

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

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

$$2) \underline{-7n^3y} - \underline{5n^2y^3} + \underline{2ny^2} - \underline{n^2y^3} - \underline{n^3y} - \underline{12ny}$$

collect like terms

$$= -7n^3y - n^3y - 5n^2y^3 - 1n^2y^3 + 2n'y^2 - 12ny$$

$$= -8n^3y - 6n^2y^3 + 2ny^2 - 12ny$$

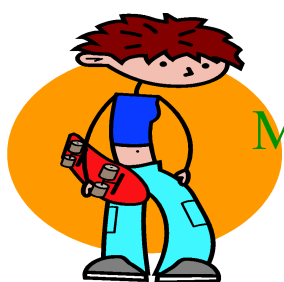
$$2ny' \left( \underline{-4n^2} - \underline{3ny^2} + \underline{1y'} - \underline{6} \right)$$

## Prime factorization of 120

Hint: Product of primes

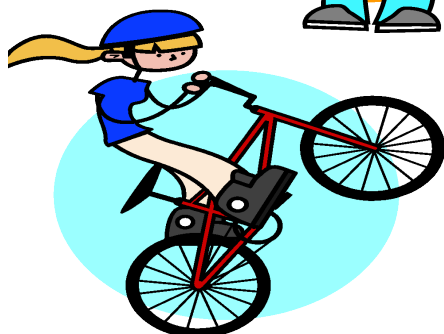
# Polynomials





Monomial

1 term



Binomial

2 terms



Trinomial

3 terms



*How are terms separated?????*



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





How many terms?

$$\underbrace{4x} - \underbrace{5y} + \underbrace{q}$$

3

$$5(\underbrace{x} - \underbrace{3y})$$

2

$$\frac{5x - 15y}{3x - 4}$$

2

5

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

Bonus:

How many terms?

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

group like terms

$$3x - 5x + 1x + 4y - 2y$$
$$-1x + 2y$$

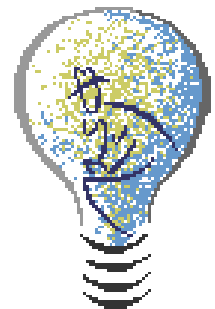
2 terms





Simplify:

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

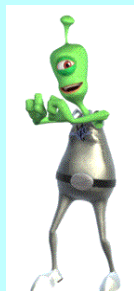


Distributing Factor

### 3.7 Multiplying Polynomials

# Expand & Simplify

Rainbow



Expand and collect like terms.

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

multiply # outside bracket  
by each term inside

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

Collect like term

$$= 2x - 14$$

The diagram illustrates the distributive property for the expression  $2x(x^3 - 5x^2 - x - 5)$ . Colored arrows show the multiplication of  $2x$  by each term in the parentheses:

- A green arrow points from  $2x$  to  $x^3$ , resulting in  $2x^4$ .
- A red arrow points from  $2x$  to  $-5x^2$ , resulting in  $-10x^3$ .
- A blue arrow points from  $2x$  to  $-x$ , resulting in  $-2x^2$ .
- A black arrow points from  $2x$  to  $-5$ , resulting in  $-10x$ .

$$2x(x^3 - 5x^2 - x - 5)$$
$$= 2x^4 - 10x^3 - 2x^2 - 10x$$

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

$$= 12xy + 28x - 20 - 6x - 15xy + 3$$

Collect like terms

$$= -3xy + 22x - 17$$



Numbers, Relations &amp; Functions 10

Name \_\_\_\_\_

## Mutilpying Polynomials

Date \_\_\_\_\_

Find each product.

★ 1)  $5(6b + 3)$

★ 2)  $8(6r + 3)$

★ 3)  $2(8x + y)$

★ 4)  $5mn(3m + 2n)$

★ 5)  $7(x - 7y)$

★ 6)  $2mn(8m - 2n)$

7)  $(4x - 2y)(6x + 6y)$

8)  $(6x + 3y)(4x - 7y)$

9)  $(2x + 5y)(7x - 8y)$

10)  $(3x + 6y)(5x - 8y)$

11)  $(5x - 4y)(5x^2 - 4xy + 6y^2)$

12)  $(8x - 7y)(6x^2 + 8xy + 3y^2)$

13)  $(6a^2 - 2a - 3)(8a + 2)$

14)  $(2k^2 + 8k - 2)(7k + 4)$

15)  $(7a^2 - 2ab + 2b^2)(a^2 - 2ab - 8b^2)$

16)  $(x^2 - 4xy + 2y^2)(x^2 - 2xy - 7y^2)$