Warm Up

Factor each of the following:

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

$3x(x^3 - 5x + 8)$

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

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

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

$-7r(3t + 7r^3 + 5r^2t)$

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

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

Simplify then Factor:

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

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

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

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

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

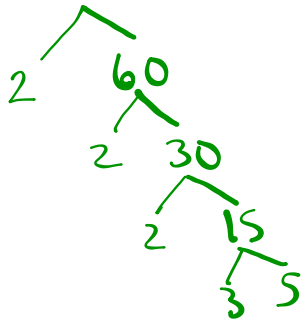
$= -7n^3y - 1n^3y - 5n^2y^3 - n^2y^3 + 2ny^2 - 12ny$

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

$= 2ny(-4n^2 - 3ny^2 + y - 6)$

Prime factorization of 120

Hint: Product of primes

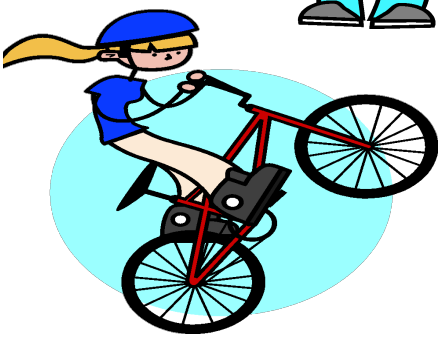


$120 = 2 \times 2 \times 2 \times 3 \times 5$

$= 2^3 \times 3 \times 5$

Polynomials

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

$\frac{3x-4}{5}$ 2

Bonus: How many terms?

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

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

$-1x + 2y$

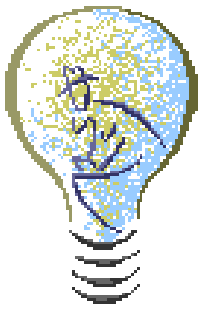
$\boxed{\text{2 terms}}$

Simplify:

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

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

$$x^2 - 3x - 9$$



Distributing Factors

3.7 Multiplying Polynomials

Expand & Simplify

Rainbow

Skittles
TASTE THE RAINBOW

Expand and collect like terms.

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

$4x - 8 - 2x - 6$

collect like terms

$4x - 2x - 8 - 6$

$2x - 14$

$$2x(x^3 - 5x^2 - 1x - 5)$$

multiply powers add exponents

$$= (2x^1(x^3)) - 2x^1(5x^2) - 2x(x) - 2x(5)$$

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

Expand and collect like terms.

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

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

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

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

Ex) $3x^1y^2(2x^1-7y^1+6x^2y^2)$

$$6x^2y^2-21xy^3+18x^3y^4$$

Numbers, Relations & 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) $(x^2-4xy+2y^2)(x^2-2xy-7y^2)$