a) $6y+3 \quad y=4$

$6(4)+3$

$24+3=27$

b) $2x^2-1 \quad x=-2$

$2(-2)^2-1$

$2(4)-1=7$

$8-1$

a) $p+8 \quad p=12$

$12+8$

20

b) $4w+8 \quad w=3$

$4(3)+8$

$12+8$

20

c) $2r-8 \quad r=4$

$2(4)-8$

$8-8=0$

2. a) $3x-7$

$3(1)-7=-4$

$3(2)-7=-1$

$3(3)-7=2$

b) $5x^2-3$

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

$5(2)^2-3=17$

$5(3)^2-3=42$

c) $3x^2+8x$

$3(1)^2+8(1)=11$

$3(2)^2+8(2)=28$

$3(3)^2+8(3)=51$

3a) $2a-3b$

$2(-2)-3(4)$

$-4-12$

-16

b) $a^2-2b-12$

$(-2)^2-2(4)-12$

$4-8-12$

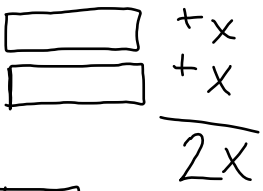
-16

c) a^2-2b^2-2a

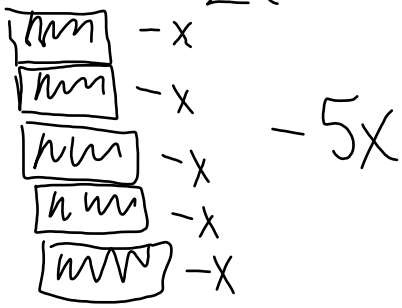
$(-2)^2-2(4)^2-2(-2)$

$4-32-(-4)$

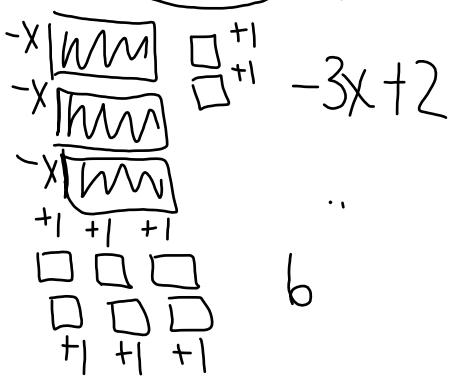
-24

a) 

$2x$

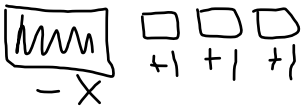
b) 

$-5x$

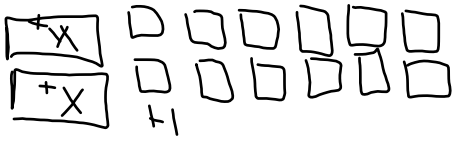


$-3x+2$

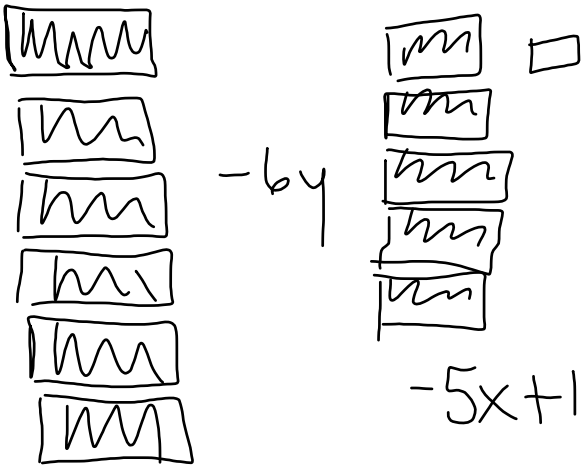
6



$-x+3$

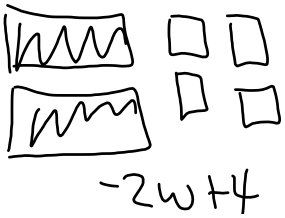


$2x+12$



$-6y$

$-5x+1$



$-2w+4$

Polynomials

A **polynomial** is one term or the sum of terms who's variables have whole number exponents

$5x^2 + 1$

Polynomials

Just like there are many different types of chairs, there are many different types of polynomials.

Monomials...

Monomials are polynomials with ONE term.

14

x

$11y^2$

"Terms are numbers, variables,
or the
product of numbers and variables

→ no addition or subtraction

Jay Leno's monologue

Binomials...

Binomials are polynomials with TWO terms.

$7x + 3$

$12y - x$

$13x^2 + x$

Terms are separated by "+" and "-" signs!

Trinomials...

Trinomials are polynomials with THREE terms.

$-6x + 7y - 2$

$7x^2 + 8x + 7$

$8 + 5m - 7m^2$

$6x - 2 + 4x$

$10x - 2$

Monomial	Binomial	Trinomial
71	10x-5w	$6x^2-5x+8$
6x	8b+2	7y+9z-q

Sort the following polynomials into the above categories:

The coefficient of the variable... $15x$ ... is 15.

The coefficient is the number in front of the variable.

example:

$5x^2 + 2y$

coefficients:

5 ; 2

$-11x^2 + 5z$

coefficients:

-11 ; 5

Degree of a Polynomial

The term with the greatest exponent determines the degree of the polynomial.

$5x-3x^2+7$

This polynomial has a degree of 2.

$5x^3+7x^8-3x+3x^2+9$

This polynomial has a degree of 8, because the highest exponent is 8.

The term "+9" has a degree of 0, because there is no variable with it.
A number all by itself is known as a "constant", because this term will never change in value.

$2x^5 - 4x^6 + 3$

Coefficients: 2, -4

Variable: x

Constant: 3

Degree: 6

Polynomials are written in descending order.

Each term is written
from the highest degree
to the lowest.

example:

$$5x^3-3x^4-x+7+4x^2$$

will be written as...

$$-3x^4 + 5x^3 + 4x^2 - x + 7$$