1.1 - Linear Polynomials and Graphing Linear Using a Table

A. Vocabulary

Monomial: An expression that is a number, a variable, or numbers and variables multiplied together. Monomials only have variables with whole number exponents and never have variables in the denominator of a fraction or variables under roots.

Monomials: **Not Monomials:**

Polynomial: A monomial or several monomials joined by + or − signs.

Vocabulary:

Constant:

Coefficient:

Degree:

Terms:

Like Terms:

Binomial:

Trinomials:

Standard Form:

Examples: 1) Decide whether each expression is a polynomial. If it isn't, explain why not.
2) Write each expression in standard form.

a) $2x^3 + 6x + 5x^4$ b) $-\dfrac{4}{3}a - a^5$ c) $\dfrac{12}{m+2}$ d) $6c^{-2} + c - 1$

e) $6z^{\frac{1}{2}} + 5z^2 - 2$ f) 7 g) $-8n - 3$ h) $3\sqrt{x+2}$

B. Adding and Subtracting Polynomials

To add or subtract polynomials, combine like terms. Add or subtract the coefficients. The variables and exponents do not change. ***Remember to subtract everything inside the parentheses after a minus sign.*** Subtract means "add the opposite," so change the minus sign to a plus sign and then change the signs of all the terms inside the parentheses.

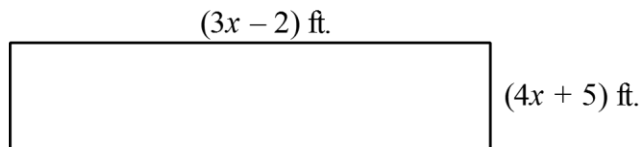**Examples:** Simplify each expression and for ***a,b,*** and ***c*** write in slope-intercept form.

a) $(5n-2)+(7-3n)$

b) $(4x+1)+(-2x+5x-6)$

c) $(u-4)-(2-5u)-(7u+8)$

d) $(6mn+5m)-(4m-2mn)+(3mn-7m)$

e) Find the perimeter in terms of x.

$(3x-2)$ ft.

$(4x+5)$ ft.

C. Solve each story

a) Maribel mows laws. She charges 6 dollars per lawn plus and hourly rate of 10 dollars. If it takes her an hour and a half to mow your lawn how much should she charge you?

b) This soccer season, Dakota scored 4 more than twice the number of goals he scored last season. He scored 7 goals last season. How many goals did he score this season?

D. Slope-intercept form

Rewrite equations in slope-intercept form by solving for y. Leave answers as simplified fractions.

a) $2x-7y=21$

b) $y-\dfrac{3}{2}=5(x-2)$

E. Solve for _y_ given _x_ and Evaluate functions

Solve for _y_ given the value of _x_. Leave answer as a fraction.

a) $y = -4x + 7$ for $x = -2$
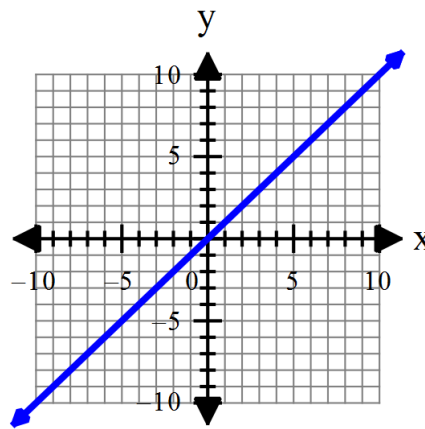
b) $6x - 9y = 30$ for $x = 3$

Evaluate each function. Leave answer as a fraction.

a) $f(x) = \frac{1}{4}x - 5, \quad f(3)$

b) $f(x) = 9x + 2, \quad f\left(\frac{1}{2}\right)$
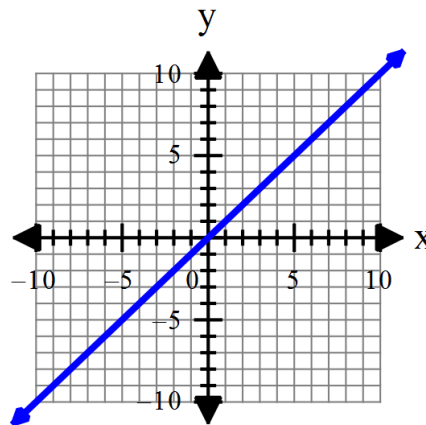
F. Graph Linear Equations Using a Table

x	$f(x) = x + 5$	$f(x)$	$(x, f(x))$
-2			
-1			
0			
1			
2			

Slope:

y-intercept:

x	$f(x) = \frac{1}{5}x$	$f(x)$	$(x, f(x))$
-15			
-10			
-5			
0			
5			
10			
15			

Slope:

y-intercept