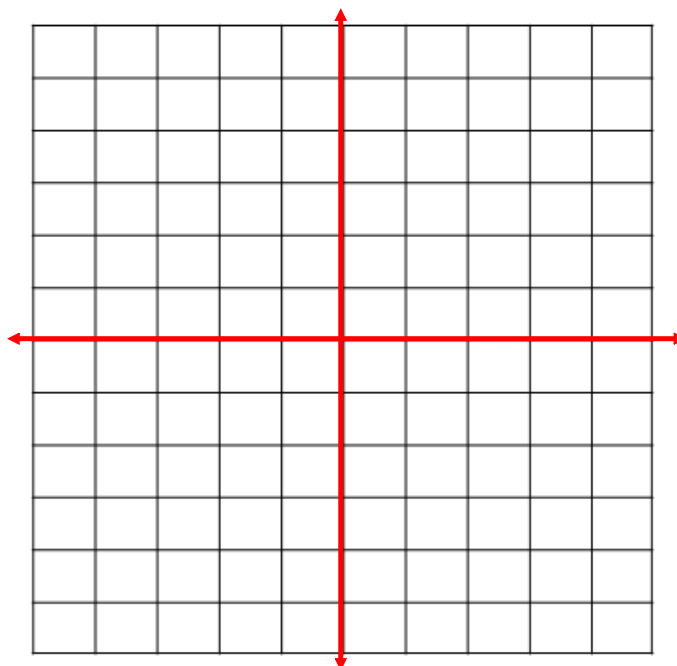


Relations: set of ordered pairs

$\{(0, 1), (2, 3), (3, 4)\}$



Other ways to show a relation:

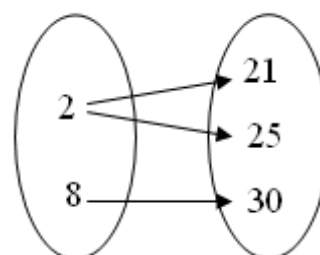
equation

$$y = \frac{1}{2}x - 6$$

table

x	y
-3	0
-1	-1
0	0
2	-2
3	4

mapping




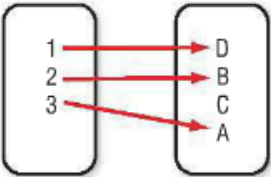
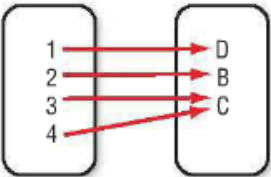
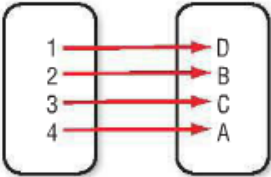
Domain: set of first elements of a relation

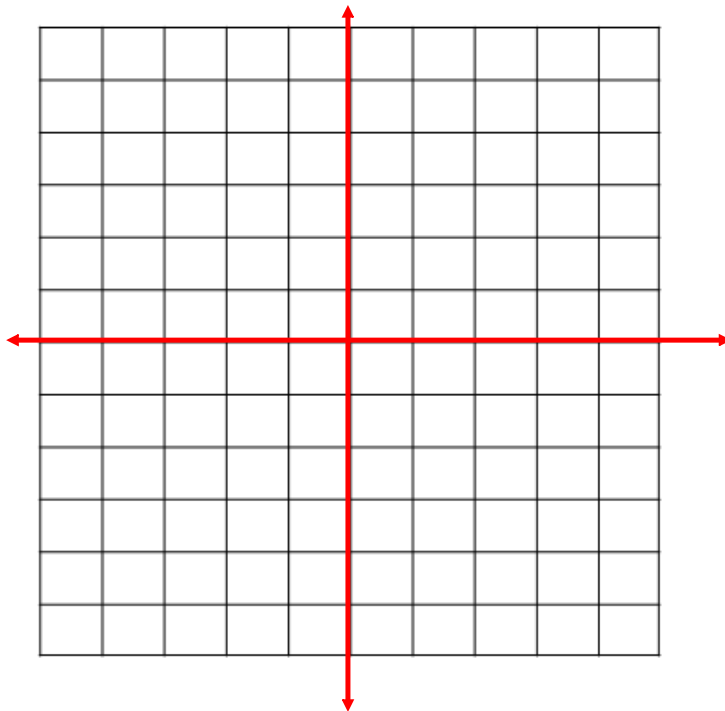
Range: set of second elements of a relation

Function: A relation in which each domain element is paired with exactly one range element

2 ways to verify a function:

- 1) Does the function pass the Vertical Line Test?
- 2) Are there double x values in the domain?

 KeyConcept Functions		
<p>one-to-one function</p> <p>Each element of the domain pairs to exactly one unique element of the range.</p>	<p>onto function</p> <p>Each element of the range corresponds to an element of the domain.</p>	<p>both one-to-one and onto</p> <p>Each element of the domain is paired to exactly one element of the range, and each element of the range corresponds to a unique element of the domain.</p>
<p>Domain Range</p> 	<p>Domain Range</p> 	<p>Domain Range</p> 



Function Notation $f(x)$

In an equation, y can be replaced with $f(x)$ called function f

$$y = -2x + 1$$

$$f(x) = -2x + 1$$

Find $f(-3)$ "find the value of function f when $x = -3$?"

$$f(-3) = -2(-3) + 1$$

2.2 Linear Equations

What does a linear equation represent?

Slope-Intercept Form $y = \underline{mx} + b$

How do you know if an equation is a linear equation?

No other operations other than addition, subtraction, and multiplication of a variable by a constant

Does not contain variables with exponents other than 1

The variables may not be multiplied together or appear in the denominator

Linear

$$5x - 3y = 7$$

$$x = 9$$

$$y = \frac{1}{2}x$$

$$y = -6$$

Non-linear

$$7a + 4b^2 = -8$$

$$y = \sqrt{x+5}$$

$$x + \underline{xy} = 1$$

$$y = \frac{1}{x}$$

Standard Form of a Linear Equation

$Ax + By = C$, where $A \geq 0$, A and B are
not both zero
 A, B, C are integers
whose greatest common
factor is 1 (reduce!!)

Write each equation in standard form:

1) $y = 3x - 9$

2) $\frac{-2}{3}x = 2y - 1$

3) $8x - 6y + 4 = 0$

Find the x-intercept and the y-intercept of:

$$2x + y - 4 = 0$$

Then graph the line

