Warm-Up:

Name the set or sets of numbers to which each number belongs.

1) -5

Real
Rational
Integer

2) -3/4

Real
Rational

3) 0

Real
Rational
Integer
Whole

4) Determine whether the following set of numbers is closed under the given operation.

integers, division

$6 \div 9 = .\overline{6}$

Not Closed

21, 22, 19

19) $-\frac{84}{30}, -\sqrt{8}, -\frac{\sqrt{7}}{8}$

$-2.8, -2.8284, -0.3307$

$-\sqrt{8}, -\frac{84}{30}, -\frac{\sqrt{7}}{8}$

21) $d = \sqrt{1.5h}$ $h = 14{,}494$ ft

$d = \sqrt{1.5(14{,}494)}$

$d = 147.45$ mi

Yes, 147.45 miles is farther than 135 miles.

22) $s = 3.1\sqrt{d}$ $d = 200$ m

$s = 3.1\sqrt{200}$

$s = 43.8$ m/s

$43.8 \frac{m}{s} \cdot 3600 \frac{s}{hr} \cdot \frac{1}{1000} \frac{km}{m}$

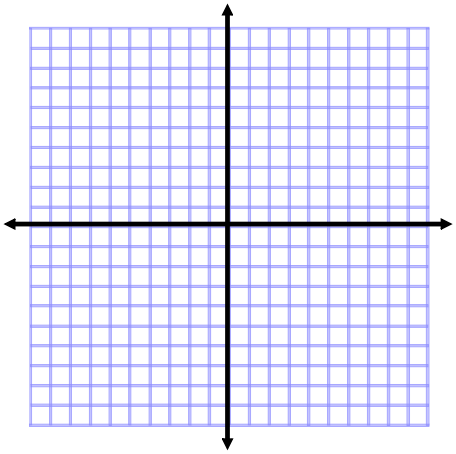
157.68 kph

Section 1-9: Functions and Graphs

A function is a relationship between inputs and outputs.

The output is dependent on the input.

A function is graphed on the coordinate plane.



Examples:

1) On page 53, name the ordered pair at point E and explain what it means.

After 6 days, blood flow returns to 100%.

A function has an independent variable and a dependent variable.

The dependent variable is the one that changes based on change from the independent variable.

Usually the independent variable is graphed on the horizontal axis (x-axis) and the dependent variable is graphed on the vertical axis (y-axis).

Time is always independent.

Write a sentence that explains one thing depends on another.

Example:
The amount of money made is dependent on the number of tickets sold.

The wearing of shorts is dependent on the temperature.

Independent: Temperature
Dependent: Wearing Shorts

Examples:
2) Identify the independent and dependent variables for each function.

a) In warm climates, the average amount of electricity used rises as the daily temperature increases and falls as the daily temperature decreases.

Independent: Temperature
Dependent: Electricity

b) The number of calories you burn increases as the number of minutes you walk increases.

Independent: Minutes walked
Dependent: Calories burned

A set of ordered pairs is called a relation.

Example: {(0, 0), (1, 9), (2, 18), (3, 27)}

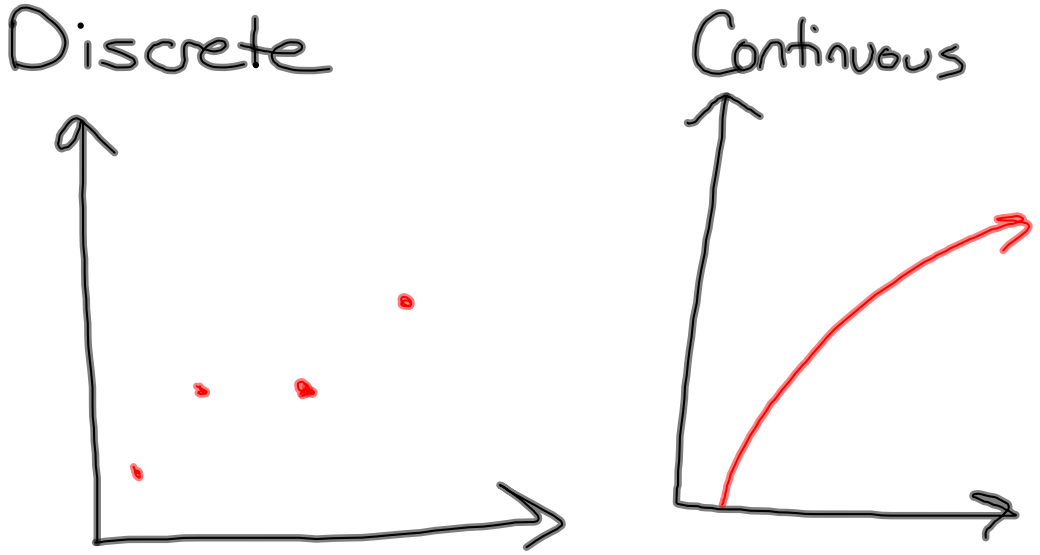
The first number in the ordered pairs (the x's) represent the domain of the relation.

The second number in the ordered pairs (the y's) represent the range of the relation.

Domain: {0, 1, 2, 3}
Range: {0, 9, 18, 27}

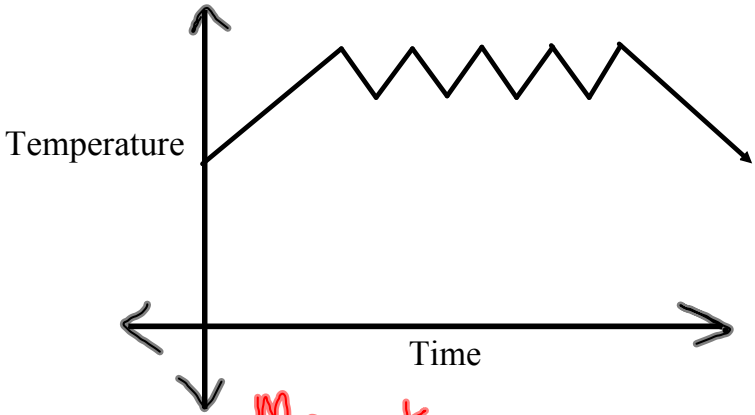
If a function (when graphed) has unconnected points, it is a discrete function.

If it has an infinite number of points and can be graphed with a line or curve, then it is a continuous function.



Examples:

3) The graph represents the temperature Mrs. Kao's classroom on a winter day. Describe what is happening in the graph.



Mrs. Kao arrives & turns on the heat. The heater turns on & off during the day until she left & turned off the heat.

Examples:

4) There are three lunch periods at a school. During the first period, 352 students eat. During the second period, 304 students eat. During the third period, 391 students eat.

a) Make a table showing the number of students for each of the three periods.

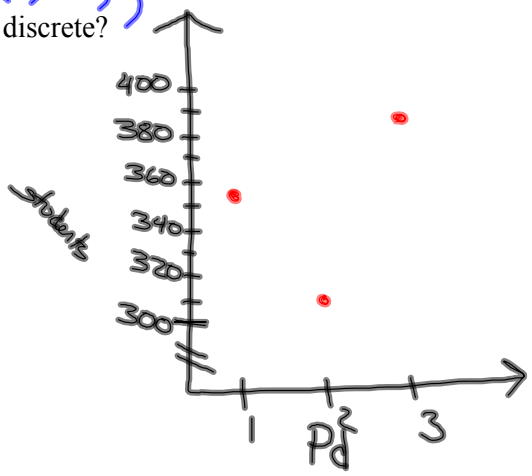
Pd	Students
1	352
2	304
3	391

b) Write the data as a relation. Then graph the data.

$\{(1,352),(2,304),(3,391)\}$

c) Is this function continuous or discrete?

Discrete



Examples:

5) Mr. Tilton tutors students. He works at most 120 hours per month for $5 per hour.

x = hours y = money

a) Identify a domain and range for this situation.

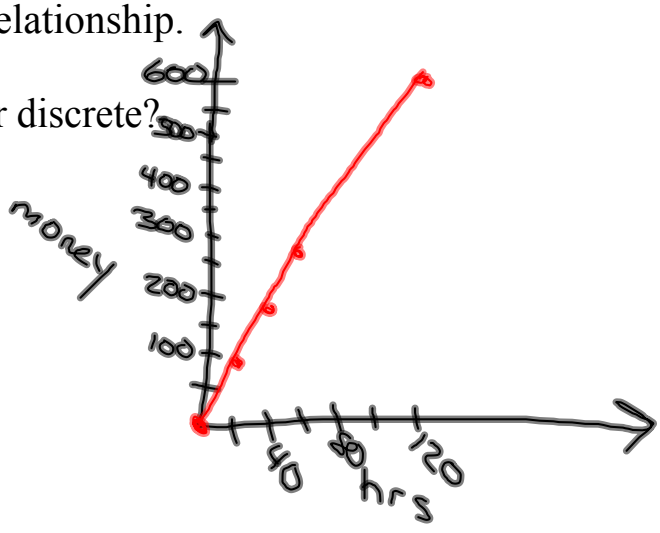
Domain: between 0 + 120 hrs

Range: between $0 + $600

b) Draw a graph that shows the relationship.

c) Is this function is continuous or discrete?

Continuous



Homework: pg. 57-58 #10-25 all, 30, 31

Section 1-9 Vocab

Chapter 1 Test ~~Tuesday~~ Wednesday