# Identifying Domain and Range with Graphs

Domain: __all x-values on graph__   Range: __all y-values on graph__

The following graph is a ___discrete___ function. A **discrete graph** is not continuous and is drawn by lifting the pencil from the paper.

Ex 1) Mrs. Grueber's Algebra I class is ordering T-shirts that cost $10 each. What is the domain and range for this situation?

* make a list *

cost (in dollars)
number of students
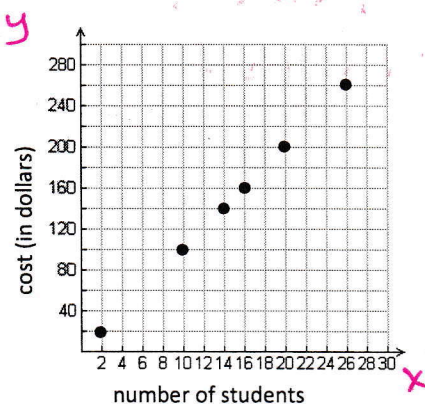
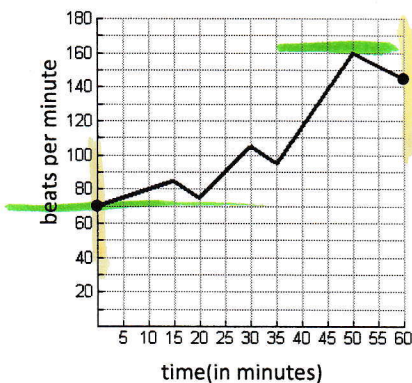x Domain __$\{2, 10, 14, 16, 20, 26\}$__

y Range __$\{20, 100, 140, 160, 200, 260\}$__

DISCRETE

The following two graphs are ___continuous___. A **continuous function** is one that you can graph without lifting your pencil from the paper.
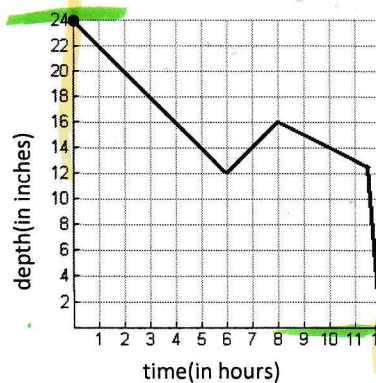
Ex 2) State the domain and range for each situation.

$$\square < x \leq \square$$
smallest # ↑   ↑ largest #
use for open dots or arrows   use for points

CONTINUOUS

A. Heartrate:

beats per minute
time(in minutes)

← x →   Domain __$0 \leq x \leq 60$__
↕ y   Range __$70 \leq y \leq 160$__

B. Water level in a wading pool

depth(in inches)
time(in hours)

← x →   Domain __$0 \leq x < 12$__
↕ y   Range __$0 < y \leq 24$__

State the domain and range on the following graphs.

$\longleftrightarrow$ x

$\updownarrow$ y

Domain $-2 \le x \le 2$

Range $-4 \le y \le -2$

$\longleftrightarrow$ x

$\updownarrow$ y

Domain $-4 < x < -1$

Range $-1 < y \le 3$

$\longleftrightarrow$ x

$y \updownarrow$
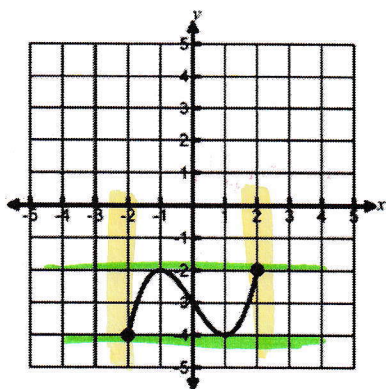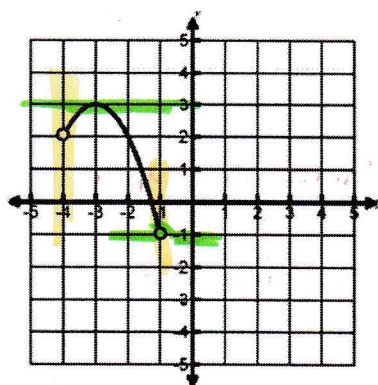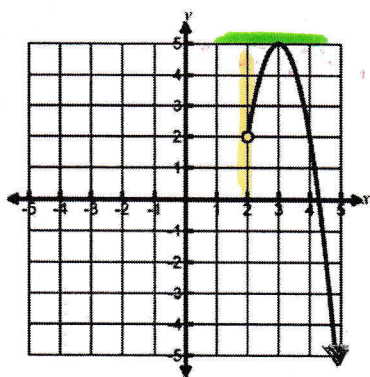
Domain $2 < x < \infty$

Range $-\infty < y \le 5$

same as $x > 2$

same as $y \le 5$

$\longleftrightarrow$ x

$y \updownarrow$
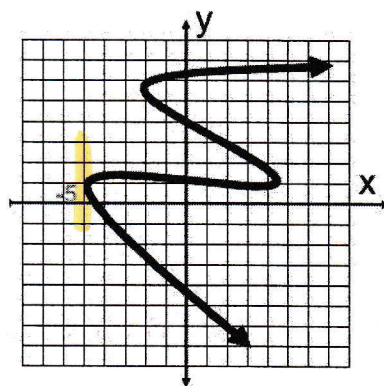
Domain $-5 \le x < \infty$

Range $-\infty < y < \infty$

same as $x \ge -5$

Practice STAAR Question

What appears to be the domain of the part of the exponential function graphed on the grid?

$\longleftrightarrow$

A $-1 \le x \le 3$

B $-1 \le y \le 3$

C $5.3 \le x \le 27$

D $5.3 \le y \le 27$