Name: _____

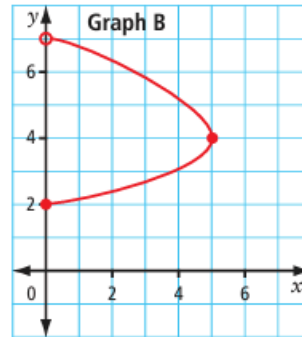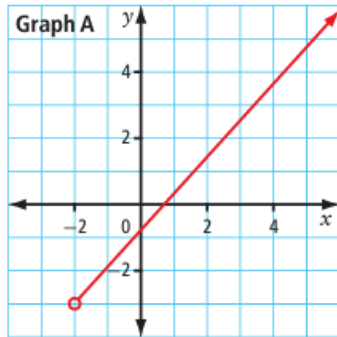*Domain and Range*

Show You Know

Ex. 1

For each graph, give the domain and range using words, a number line, interval notation, and set notation.

Graph A

Graph B

Ex. 2

A motorized model Ferris wheel has a radius of 22 cm. The support structure keeps the bottom of the wheel 3 cm above the base. It takes 10 s to complete one revolution. The graph shows the height of one of the chairs during two rotations of the wheel, starting at the lowest point.

height of a chair during two rotations
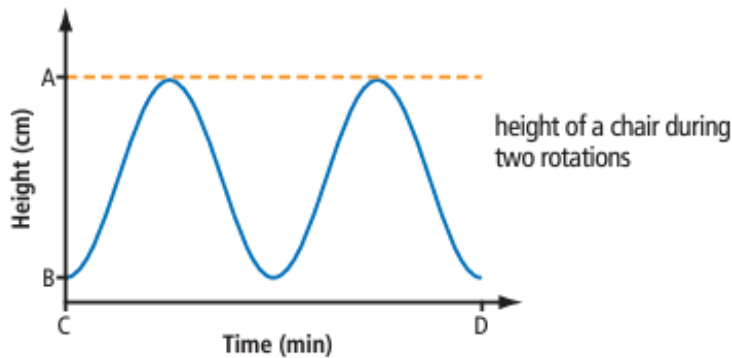
a) What are the values of A, B, C, and D? What do they represent?

b) What is the domain and range of the graph? Express each in words, as a number line, in interval notation, and in set notation.

Name: _____

Domain and Range

Ex. 3

Data for a relation are recorded in the table of values. Give the domain and range using set notation and lists.

a	-3	-2	-1	0	1	2
b	5	6	7	8	9	10

Ex. 4

The same species of corn grows at an average rate of 5 cm per day from the start of week 7 until the end of week 9. The plant's growth in this period is modeled using the formula $h = 5a + 214$, where h is the height of the plant, in centimeters, and a is the age of the plant, in days. Use a graphing calculator to show a graph of the plant's height for these three weeks.

Practice

1. Draw a number line to represent each set of numbers.
   Hint: On a number line a solid dot means that the value is part of the set and an open circle means that the value is not part of the set.

   a. {– 2, 0, 2, 4, 6, 8, 10}
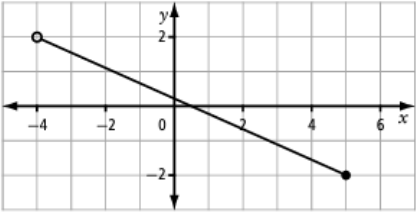
   b. {x | x < 5}
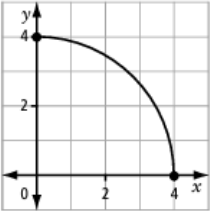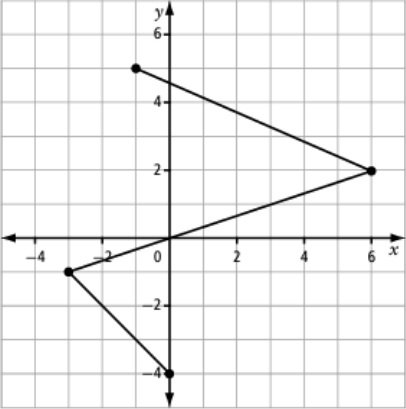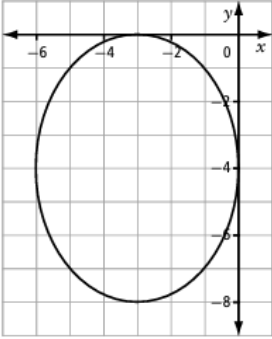
   c. your age from grade 1 until now
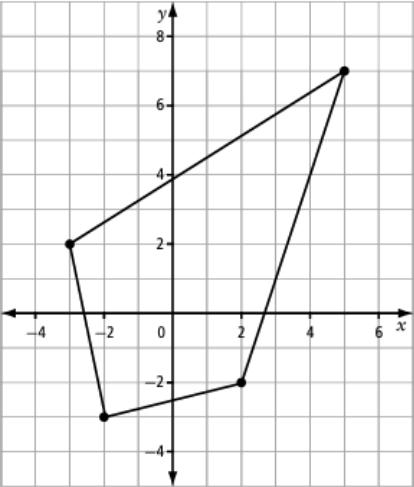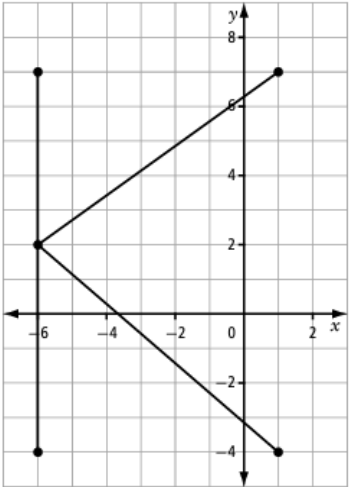
   d. all the factors of 15

   e. the square roots of all perfect squares from 1 to 100

   f. (–3, 4]

Name: _____

Domain and Range

2. Give the domain and range of each graph. Use both set notation and interval notation.

a)

b)

c)

d)

e)

f)

Domain and Range

3. The domain of a relation is given as (–8, 6), while its range is {y | – 4 ≤ y < 5}. Set up a grid with the x-axis and y-axis marked from –10 to 10. Draw a rectangle that the relation would lie within when graphed. When drawing the rectangle, use a solid line if the graph could be on it, and a dashed line if the graph only comes up to it, but does not include it.
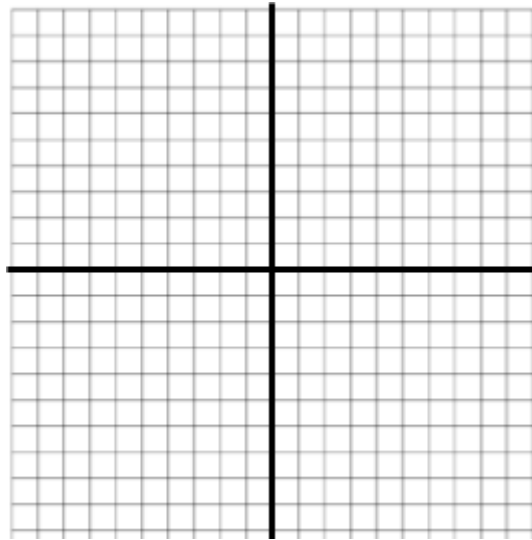
4. The cost, C, of filling up a car with gasoline and buying an $8.00 car wash can be expressed by the equation C = 0.92n + 8.00, where n is the number of liters of gasoline purchased. The car has a gas tank capacity of 40 L.
    a. What is the domain of this equation?

    b. What is the range of costs for this problem?

    c. Which is the independent variable? Explain why.