Lesson 6.2: Domain and Range

Practice – II

1. Determine the domain and range of the following relations as sets in list form.

a. {(3,6), (6,7), (10,11), (13,17), (14,20)}

Domain: $\{3, 6, 10, 13, 14\}$

Range: $\{6, 7, 11, 17, 20\}$

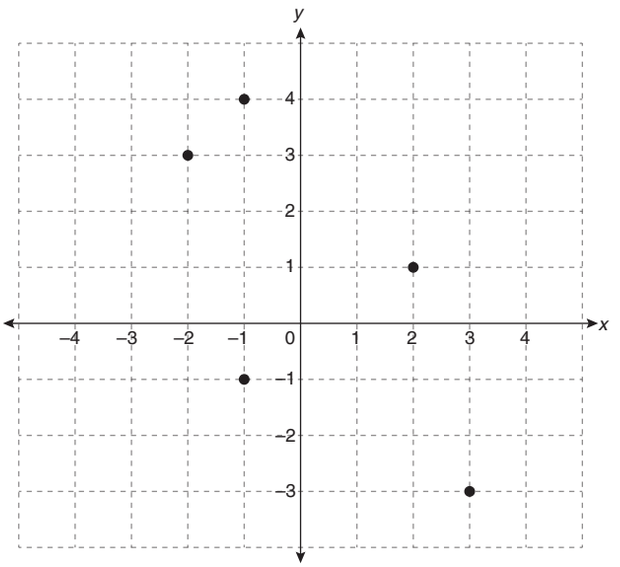
b.

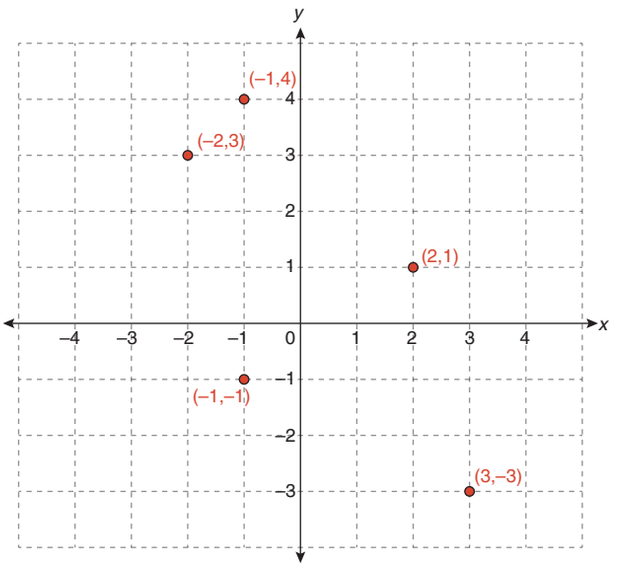
x	y
–2	–3
–5	5
–8	11

Domain: $\{-2, -5, -8\}$

Range: $\{-3, 5, 11\}$

c.

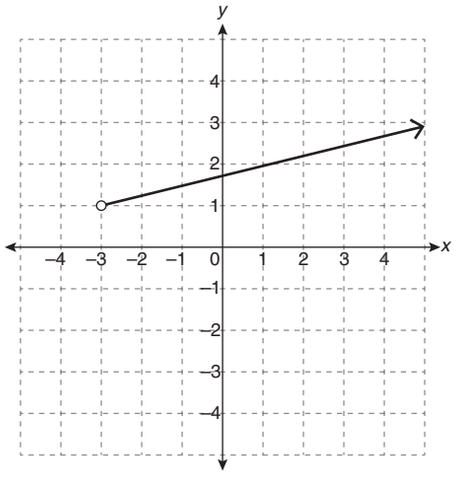




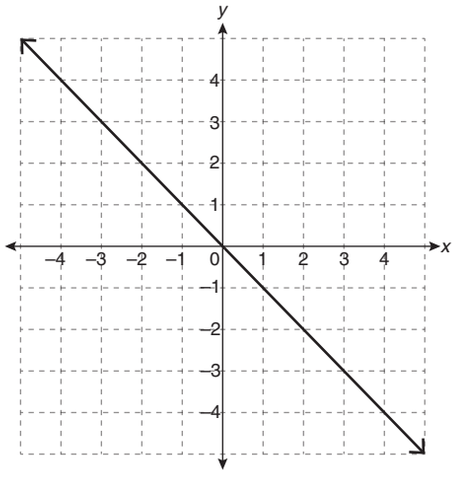
Domain: $\{-2, -1, 2, 3\}$

Range: $\{-3, -1, 1, 3, 4\}$

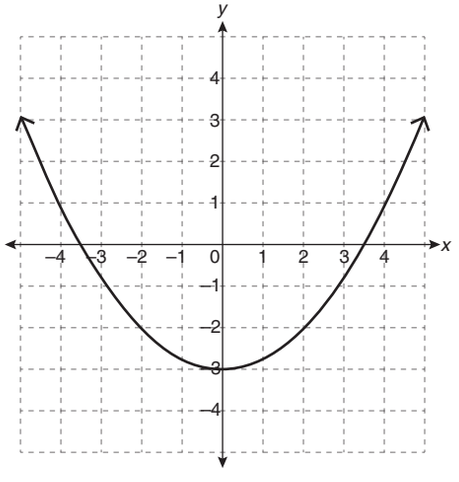
2. State the domain and range of the following relations using set-builder notation and interval notation.



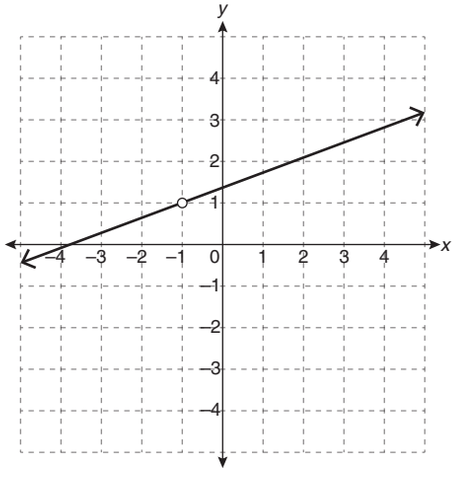
D: $\{x \mid x > -3, x \in R\}$ D: $(-3, +\infty)$
R: $\{y \mid y > 1, y \in R\}$ R: $(1, +\infty)$



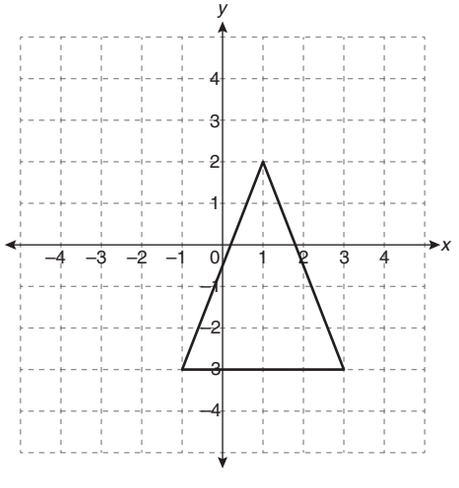
D: $\{x \mid x \in R\}$ D: $(-\infty, +\infty)$
R: $\{y \mid y \in R\}$ R: $(-\infty, +\infty)$



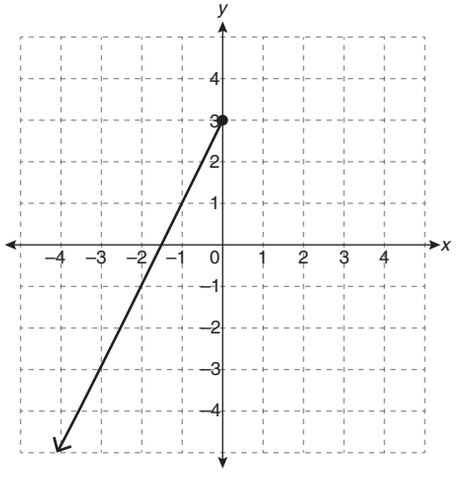
D: $\{x \mid x \in R\}$ D: $(-\infty, +\infty)$
R: $\{y \mid y \geq -3, y \in R\}$ R: $[-3, +\infty)$



D: $\{x \mid x \neq -1, x \in R\}$ D: $(-\infty, -1) \& (-1, +\infty)$
R: $\{y \mid y \neq 1, y \in R\}$ R: $(-\infty, 1) \& (1, +\infty)$



D: $\{x \mid -1 \leq x \leq 3, x \in R\}$ D: $[-1, 3]$
R: $\{y \mid -3 \leq y \leq 2, y \in R\}$ R: $[-3, 2]$



D: $\{x \mid x \leq 0, x \in R\}$ D: $(-\infty, 0]$
R: $\{y \mid y \leq 3, y \in R\}$ R: $(-\infty, 3]$

3. Pop cans can be returned to the bottle depot in exchange for a refunded deposit. Complete the following table.

Number of Pop Cans, n	Refund, r ($)
1	0.10
2	0.20
5	0.50
10	1.00
12	1.20
15	1.50
43	4.30

a. State the independent and dependent variables for the relation.

The independent variable is the number of pop cans.

The dependent variable is the refund amount.

b. Explain the relationship between the variables.

The amount of the refund depends on the number of pop cans returned.

c. Explain why there cannot be negative values for this type of relation.

A negative number of cans cannot be returned and a refund cannot be a negative dollar value.

d. Is the data represented in this situation discrete or continuous? Explain.

The data is discrete because only whole numbers of pop cans can be returned for a refund in increments of 10 cents.

e. Extrapolate how much money would be refunded when 367 pop cans returned.

A total of $367 \times \$0.10 = \$36.70$ would be refunded.

f. Determine the domain and range specific to the table of values above.

Domain: $\{1, 2, 5, 10, 12, 15, 43\}$

Range: $\{0.10, 0.20, 0.50, 1.00, 1.20, 1.50, 4.30\}$

Please complete *Lesson 6.2 Explore Your Understanding Assignment* located in *Workbook 6.2* before proceeding to *Lesson 6.3*.