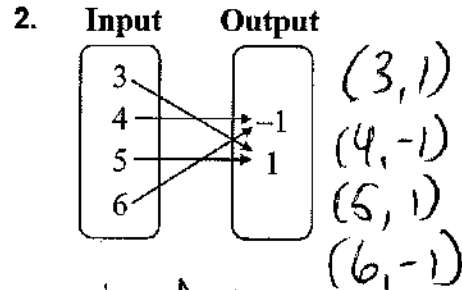
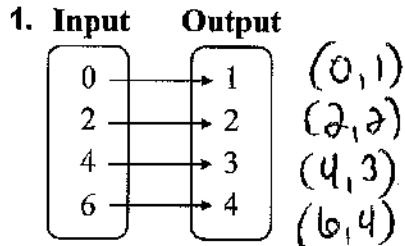


6.1 – 6.3

Study Guide

List the ordered pairs shown in the mapping diagram.

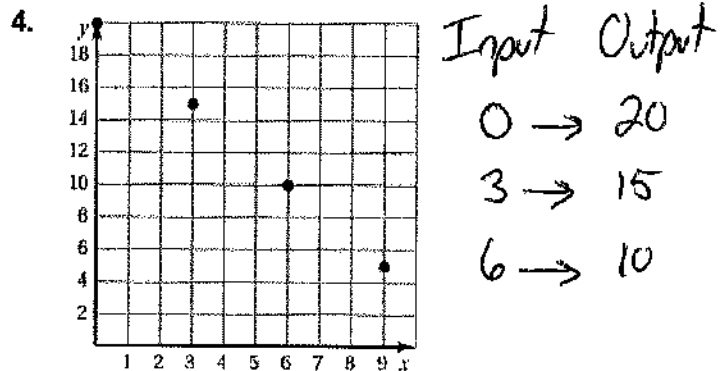
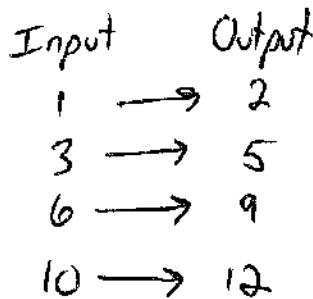


Beginning of the arrow is the x, end of the arrow is y.

Draw a mapping diagram of the set of ordered pairs and coordinate grid.

Example of a mapping diagram is shown in problems 1 and 2

3. $(1, 2), (3, 5), (6, 9), (10, 12)$



5. The table shows the cost of a collect call.

Minutes	1	2	3	4	5	6	7
Cost	\$3	\$3.25	\$3.50	3.75	4.00	4.25	4.50

a. Complete the table.

b. Is the relation a function? Explain.

Yes it is a function. There is one output for each input.

c. List the ordered pairs.

$(1, 3), (2, 3.25), (3, 3.5), (4, 3.75), (5, 4), (6, 4.25), (7, 4.5)$

d. Describe the pattern. How does the cost change as the number of minutes increases?

As each minute increases by 1, the cost goes up by .25.

Write a function rule for the statement.

6. The output is eight less than the input.

7. The output is double the input.

$$y = x - 8$$

$$y = 2x$$

Find the value of y for the given value of x .

8. $y = (x) - 8$; $x = 5$

$$y = 5 - 8$$

$$y = -3$$

9. $y = 8x$; $x = 3$

$$y = 8(3)$$

$$y = 24$$

10. $y = 4x - 1$; $x = 10$

$$y = 4(10) - 1$$

$$y = 40 - 1$$

$$y = 39$$

11. $y = \frac{x}{2} + 5$; $x = -4$

$$y = \frac{-4}{2} + 5$$

$$y = -2 + 5$$

$$y = 3$$

12. Your school club is selling popcorn at the football game. The cost of making the popcorn is \$90. You charge \$1.50 for each bag of popcorn.

$$\text{Profit} = \text{Income} - \text{Cost}$$

a. Write a function you can use to find the profit P for selling b bags of popcorn.

Income: $\$1.50 \text{ per bag} = 1.5b$ $\leftarrow P = 1.5b - 90$ $\rightarrow$ Costs: \$90 to make popcorn

b. You will break even if the cost of making the popcorn equals your income. How many bags of popcorn must you sell to break even?

Break even: $\text{Cost} = \text{Income}$

$$\frac{90}{1.5} = \frac{1.5b}{1.5} \quad \text{Solve for } b \text{ to find the break even.}$$

$b = 60$ bags of popcorn to break even

Use the graph or table to write a linear function that relates y to x .

13.

x	-1	0	1	2
y	3	0	-3	-6

$$b = 0$$

$$m = \frac{\text{change } y}{\text{change } x} = \frac{-3}{1} = -3$$

$$y = -3x$$

14.

x	-10	-5	0	5
y	-2	-1	0	1

$$b = 0$$

$$m = \frac{1}{5}$$

$$y = \frac{1}{5}x$$

$$y = \frac{16}{1}x$$

$$y = \frac{16}{1}(32) = y = \frac{512}{32} = 16$$

32 ounces cost \$16

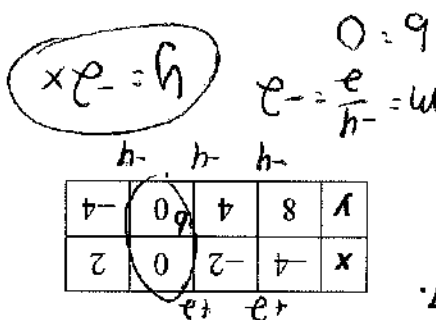
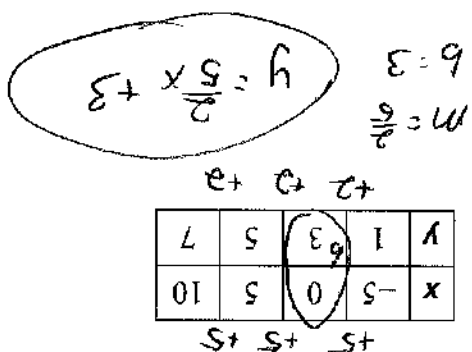
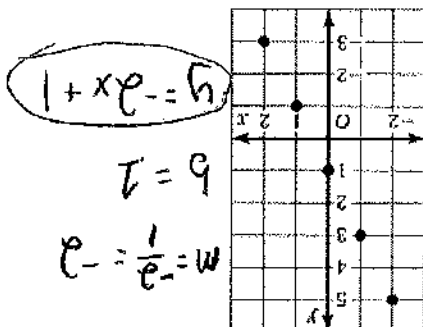
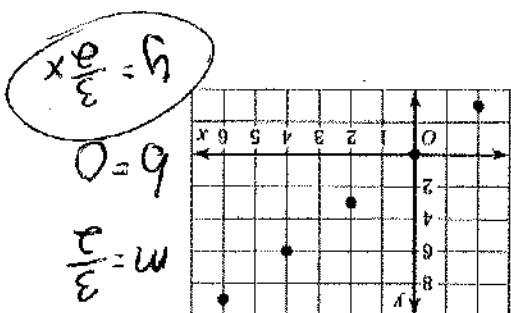
c. How much does it cost to purchase 32 fluid ounces of brewed coffee?

a. Which variable is independent?
Dep: Cost
Ind: Fluid Ounces

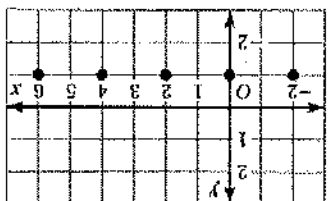
b. Write a linear function that relates y to x .
Interpret the slope.
 $m = \frac{8}{5} = \frac{16}{10} = \frac{16}{5}$
 $b = 0$
 $y = \frac{16}{5}x + 0$
 $y = \frac{16}{5}x$

Fluid Ounces, x	Cost, y
0	0
8	16
16	32
24	48

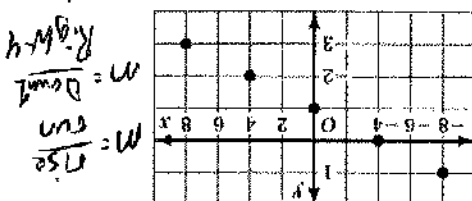
21. The table shows the cost y (in dollars) of x fluid ounces of brewed coffee.



$y = 0x + -1$
 $b = -1$



$y = -\frac{1}{2}x + -1$
 $b = -1$
 $m = -\frac{1}{2}$



15. Scaled by 2

16.

17.

18.

19.

20.

22. The cost of admission for a student is \$4 less than the cost of admission for an adult.

a. Write a function that relates the cost of admission for a student s with the cost of admission for an adult a .

$$s = a - 4$$

b. What is the cost of admission for a student when the cost of admission for an adult is \$7.50?

$$a = 7.50$$

$$s = a - 4$$

$$s = 7.50 - 4$$

$$s = 3.50$$

Students cost \$3.50

c. What is the cost of admission for an adult when the cost of admission for a student is \$2?

$$s = 2$$

$$s = a - 4$$

$$2 = a - 4$$

$$a = 6$$

Adults costs \$6

a. Which variable is independent? dependent?

Independent = Height (x)
Dependent = Area (y)

b. Write a linear function that relates the area of the triangle to the height of the triangle.

$$m = \frac{1}{3} \quad b = 0$$

$$y = mx + b$$

$$y = 3x$$

c. The formula for the area of a triangle is $A = \frac{1}{2}bh$. What is the length (in feet) of the base of the triangle?

Use one coordinate and solve for b .

(1, 3)
(2, 6)

$$\frac{3}{2} = \frac{1}{2}b$$

$$3 = \frac{1}{2}b(2)$$

$$6 = \frac{1}{2}(b)(2)$$

$$\frac{1}{6} = \frac{1}{6}$$

$$b = 6$$

Base = 6 ft.