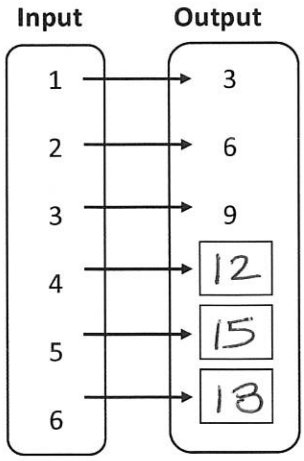
Name: Key 2019-2020 Period: _____

6.1-6.3 – Review

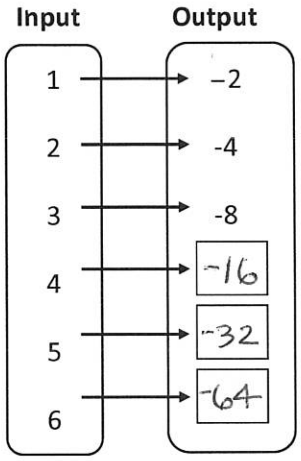
Describe the pattern in the mapping diagram AND complete the diagram.

1)



Pattern:
As input increases by 1, output increases by 3.

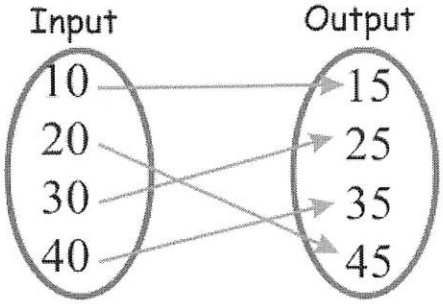
2)



Pattern:
As input increases by 1, output doubles.

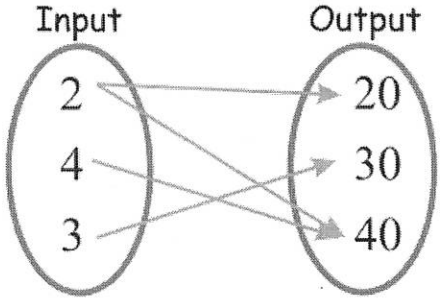
List the ordered pairs shown in the mapping diagram AND explain if it is a function or not.

3)



(10,15), (20,45), (30,25), (40,35)
A function b/c one output for each input.

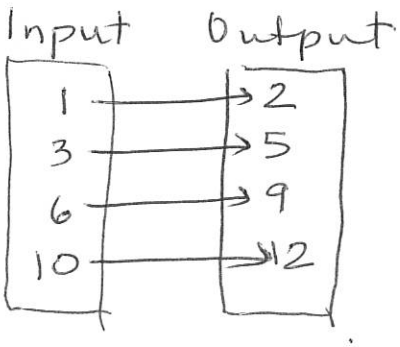
4)



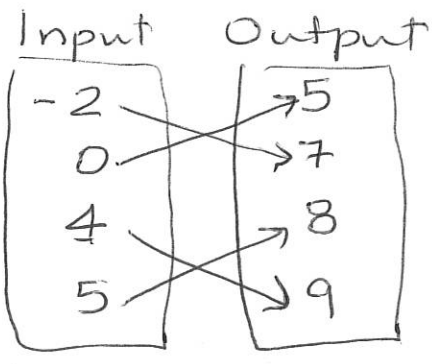
(2,20), (2,40), (4,40), (3,30)
Not a function because 2 different outputs for same input.

Draw a mapping diagram of the set of ordered pairs.

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

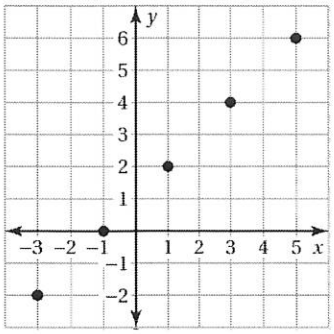


6) (−2, 7), (0, 5), (5, 8), (4, 9)



Draw a mapping diagram for the graph. **Then** describe the pattern of inputs and outputs.

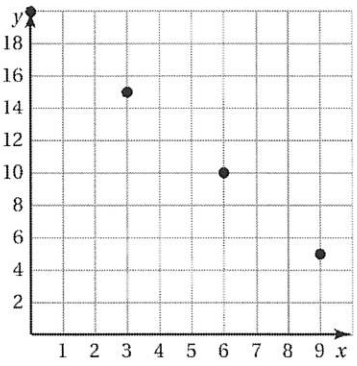
7)



Input	Output
-3	-2
-1	0
1	2
3	4
5	6

As Input increases by 2, the output also increases by 2.

8)



Input	Output
3	15
6	10
9	5

As input increases by 3, the output decreases by 5.

9) The table shows the number of minutes for a phone call on an old-school pay phone and the total cost.

Minutes	1	2	3	4	5	6	7
Cost	$3	$3.25	$3.50	?	?	?	?

3.75 4.00 4.25 4.50

a) Fill in the blanks on the table using the pattern and describe the pattern.

b) How does the cost change as the number of minutes increases?

Cost increases by $0.25 as minutes increase by 1.

c) Is the relation a function? Explain.

Yes, there is one output for each input.

d) Based on this pattern, how much would you expect to pay for a 10 minute phone call?

$5.25

Write an equation that describes the function.

10)

Input, x	Output, y
0	-7
-1	-8
-2	-9
-3	-10

typo! Should all be negative!

$y = x - 7$

11)

Input, x	Output, y
0	0
1	-5
2	-10
3	-15

$y = -5x$

12)

Input, x	Output, y
400	200
200	100
100	50
50	25

$y = \frac{x}{2}$ or $y = \frac{1}{2}x$

13)

Input, x	Output, y
32	44
34	46
36	48
38	50

$y = x + 12$

Write a function rule (equation) for the statement.

14) The output is one-half the input. $y = \frac{1}{2}x$ or $y = \frac{x}{2}$

15) The output is twelve less than the input. $y = x - 12$

16) The output is five more than double the input. $y = 2x + 5$

17) The output is the ten times the sum of input and 7. $y = 10(x + 7)$

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

18) $y = \frac{x}{4} + 5;\ x = -12$

$y = -3 + 5$

$y = 2$

19) $y = -7x - 6;\ x = 10$

$y = -70 - 6$

$y = -76$

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

20) $y = -3x + 7;\ y = -17$

$-17 = -3x + 7$

$-7 \quad -7$

$-24 = -3x$

$\frac{-3x}{-3} = \frac{-24}{-3}$

$x = 8$

21) $y = \frac{3}{2}x - 8;\ y = 13$

$13 = \frac{3}{2}x - 8$

$+8 \quad +8$

$21 = \frac{3}{2}x$

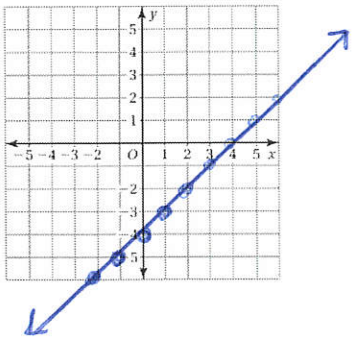
$\frac{2}{3}$

$x = 14$

Graph the function. (Clue: create a input-output table)

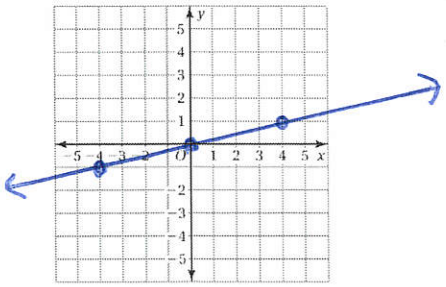
22) $y = x - 4$

x	$y = x - 4$	y
-1	$-1 - 4$	-5
0		-4
1	$1 - 4$	-3



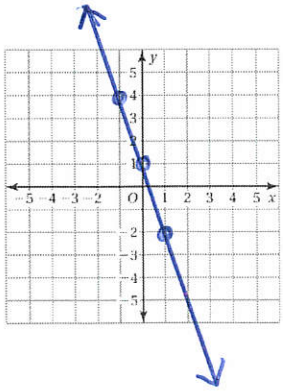
23) $y = \frac{x}{4}$

x	$y = \frac{x}{4}$	y
-4	$\frac{-4}{4}$	-1
0		0
4	$\frac{4}{4}$	1



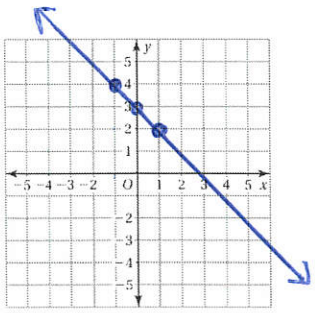
24) $y = -3x + 1$

x	$y = -3x + 1$	y
-1	$-3(-1) + 1$ $3 + 1$	4
0		1
1	$-3 + 1$	-2



25) $y = -x + 3$

x	$y = -x + 3$	y
-1	$-(-1) + 3$ $1 + 3$	4
0		3
1	$-1 + 3$	2



In your own words, what is the rise of the slope of a line?

26) In your own words, how do you find the rise of the slope of a line?

How far the point moves up or down

27) In your own words, how do you find the run of the slope of a line?

How far the point moves left or right

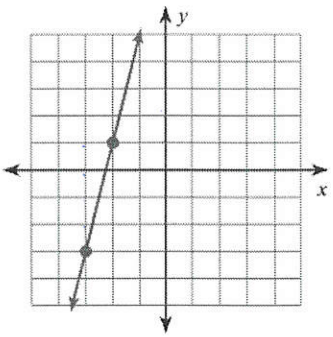
28) How do you use the rise and run of a line to find the slope?

Amount line rises over how much the line runs.

$$\text{slope} = \frac{\text{rise}}{\text{run}}$$

For the following, identify the (a) rise, (b) run, (c) slope, and (d) y-intercept of each of the lines

29)



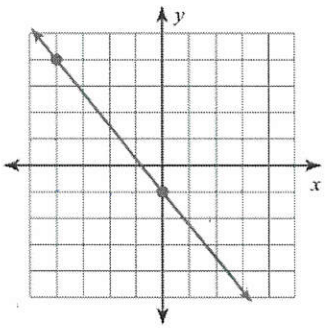
a) 4

b) 1

c) $\frac{4}{1}$

d) (0, 9)

30)



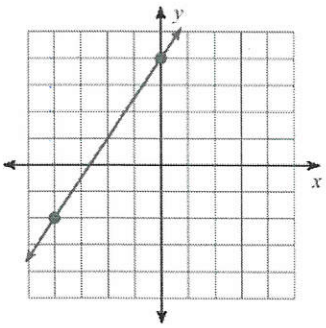
a) -5

b) 4

c) $\frac{-5}{4}$

d) (0, -1)

31)



a) 6

b) 4

c) $\frac{6}{4} = \boxed{\frac{3}{2}}$

d) (0, 4)