

Name \_\_\_\_\_

Date \_\_\_\_\_

Functions

Math 8

# Functions Review

Answer each of the following.

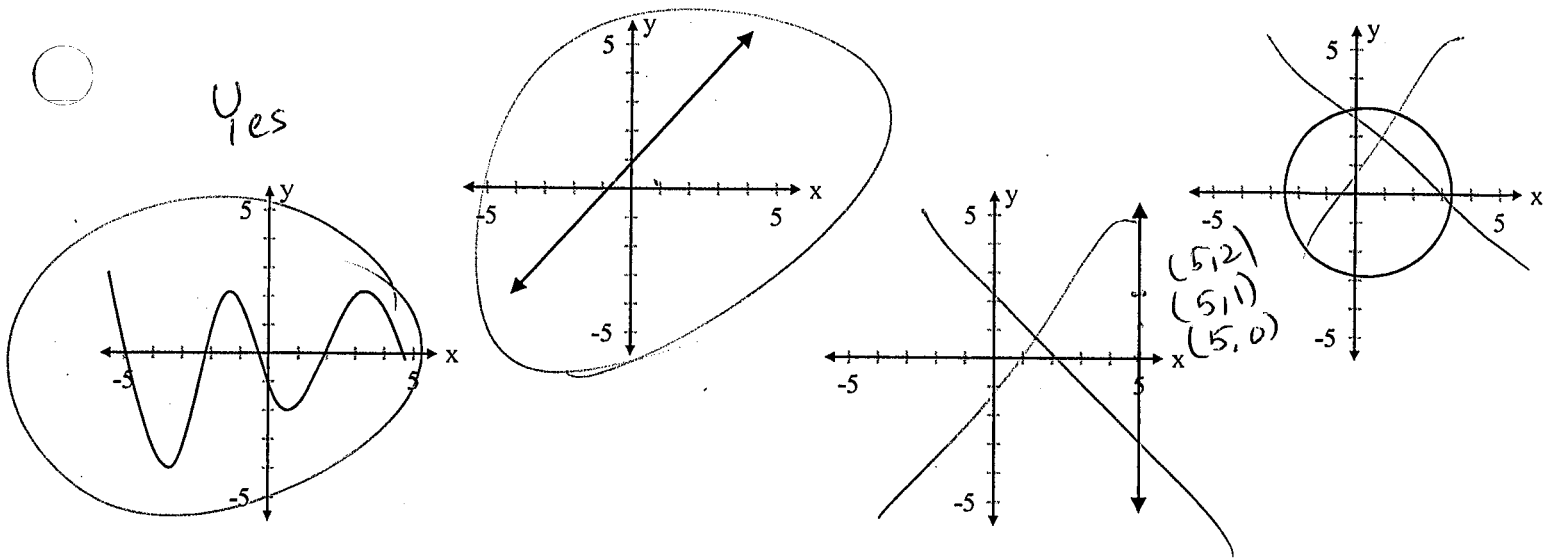
1) How can you identify from a graph that a function is a *linear* function?

it graphs a line

★ 2) The set of all output values is called range?

★ 3) What is the name of the point (0,0)? origin

4) Which of the following are functions? (circle them) How do you know?



5) Which of the following input/output tables are functions? Write *yes* or *no*.

Input	Output
1	2
1	4
3	6
5	9

No

Yes

Input	Output
1	3
2	3
3	4
4	4

<i>Input</i>	<i>Output</i>
0	0
1	1
3	2
5	3

Yes

<i>Input</i>	<i>Output</i>
1	6
2	6
3	6
4	6

Yes

<i>Input</i>	<i>Output</i>
6	1
6	2
6	3
6	4

No

<i>Input</i>	<i>Output</i>
5	8
6	7
7	8
9	9

Yes

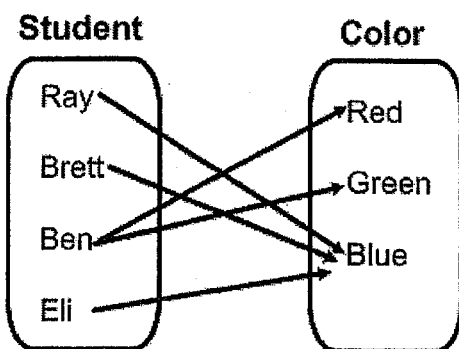
6) a) Is the following set a function?  $\{(2, 9), (-4, -4), (-2, 7), (2, 2)\}$  No

b) List the domain of the set  $\{-4, -2, 2\}$

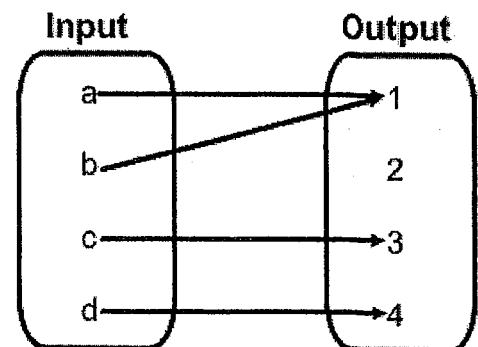
7) a) Is the following set a function?  $\{(3, 6), (4, 6), (9, 6), (-3, 6)\}$  Yes

b) List the range of the set  $\{6\}$

8) Identify if the following mapping diagrams are functions. Write *yes* or *no*.



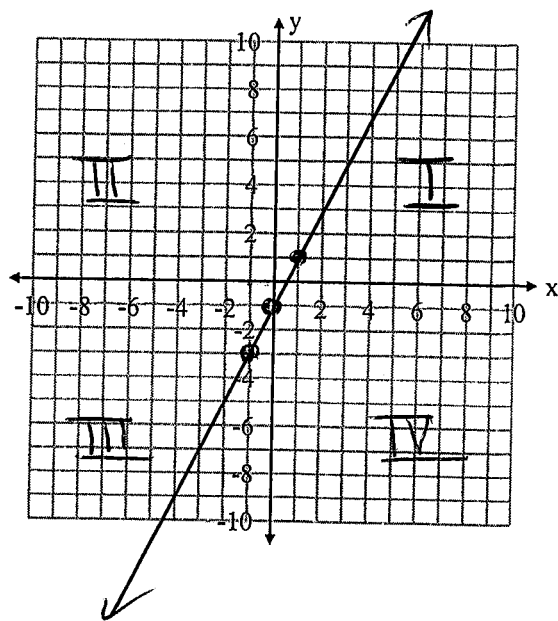
No



Yes

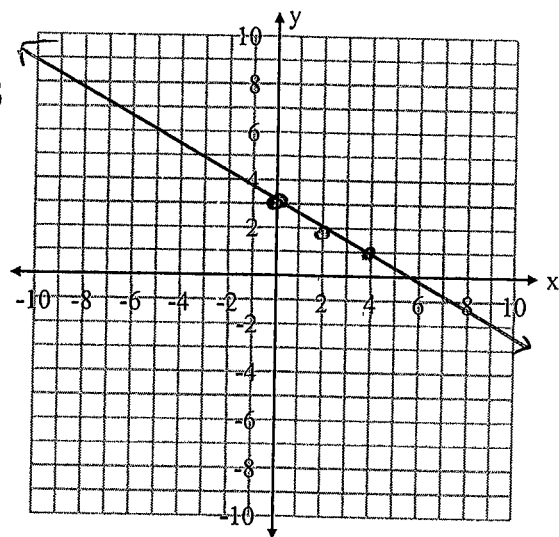
9) Graph using an input/output table.  $y = 2x - 1$

$x$	$2x - 1$	$y$
-1	$2(-1) - 1$	-3
0	$2 \cdot 0 - 1$	-1
1	$2 \cdot 1 - 1$	1



10) Graph using an input/output table.  $y = -\frac{1}{2}x + 3$

$x$	$-\frac{1}{2}x + 3$	$y$
0	$-\frac{1}{2} \cdot 0 + 3$	3
2	$-\frac{1}{2} \cdot 2 + 3$	2
4	$-\frac{1}{2} \cdot 4 + 3$ $-2 + 3$	1



11) Calculate the slope of the line that contains the points (5, 8) and (-3, 6).

$$m = \frac{\Delta y}{\Delta x} = \frac{8 - 6}{5 - (-3)} = \frac{2}{8} \text{ or } \boxed{\frac{1}{4}}$$

12) Calculate the slope of the line that contains the points  $(-4, 0)$  and  $(2, 0)$ .

$$m = \frac{\Delta y}{\Delta x} = \frac{0 - 0}{-4 - 2} = \frac{0}{-6} = \boxed{0}$$

13) Calculate the slope of the line that contains the points (-1, 8) and (-7, -9).

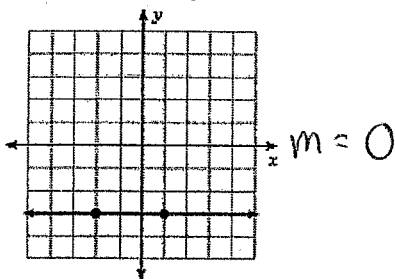
$$m = \frac{\Delta y}{\Delta x} = \frac{8 - (-9)}{-1 - (-7)} = \boxed{\frac{17}{6}}$$

14) Calculate the slope of the line that contains the points (4, -6) and (10, -5).

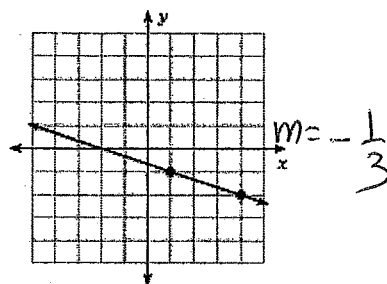
$$m = \frac{\Delta y}{\Delta x} = \frac{-6 - (-5)}{4 - 10} = \frac{-1}{-6} = \frac{1}{6}$$

Calculate the slope of each of the lines below.

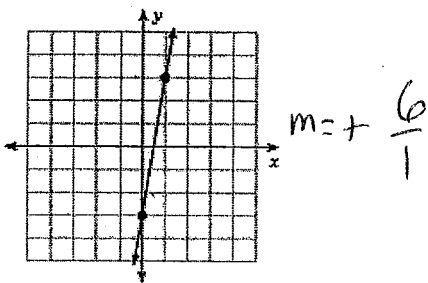
15)



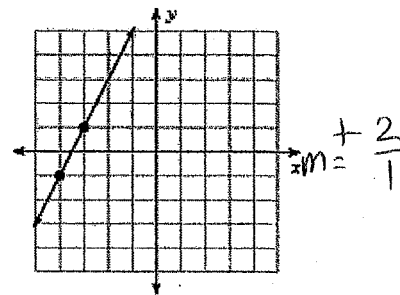
16)



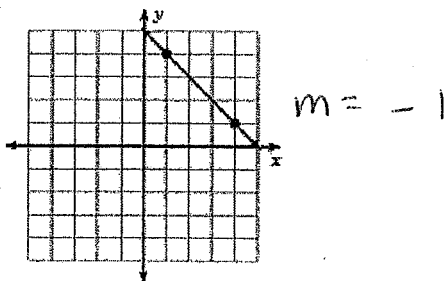
17)



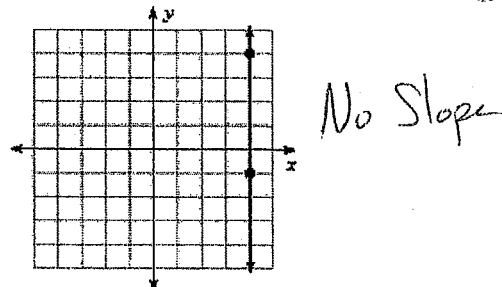
18)



19)



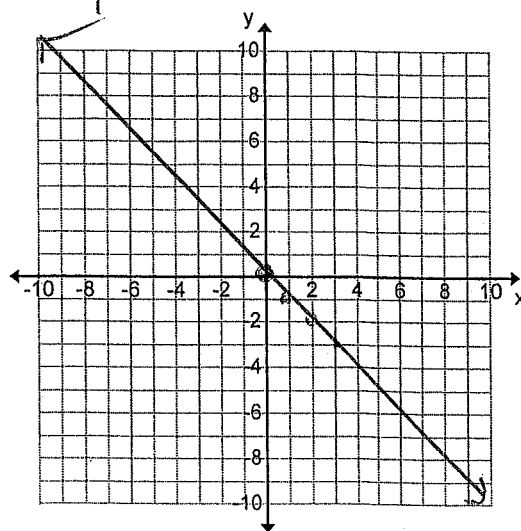
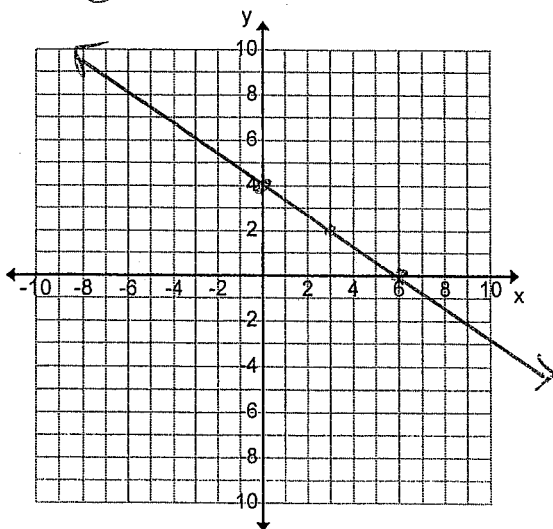
20)



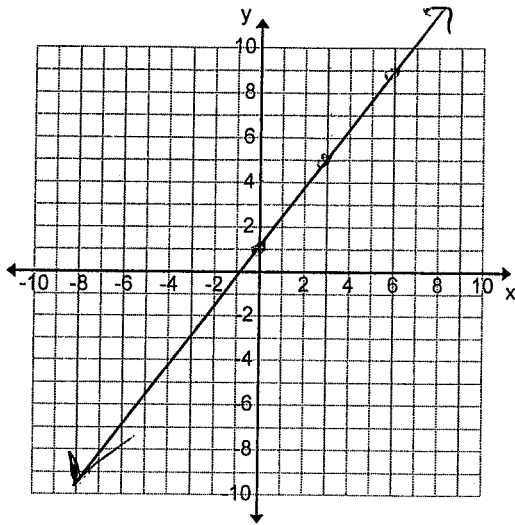
Graph each of the following using slope-intercept.

21)  $y = \frac{-2}{3}x + 4$

21)  $y = -x$

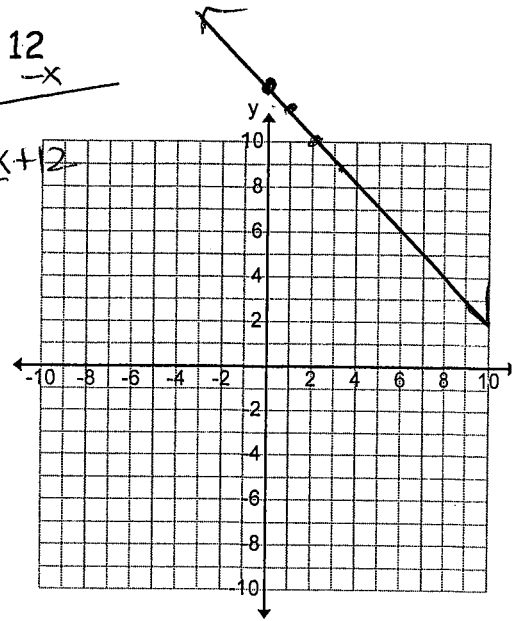


26)  $y = \frac{4}{3}x + 1$



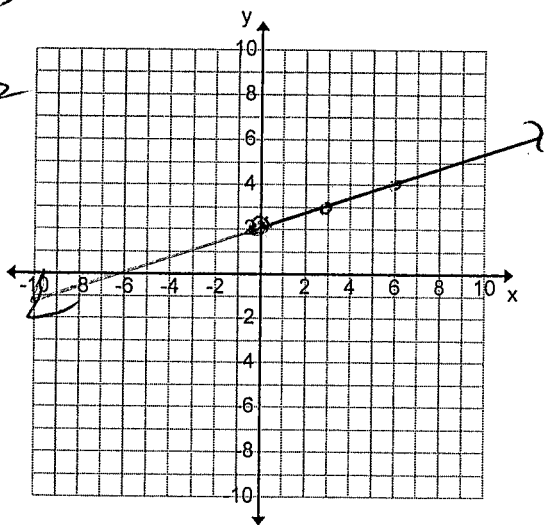
27)  $y + x = 12$

$$\begin{array}{r} -x \\ \hline y = -x + 12 \end{array}$$



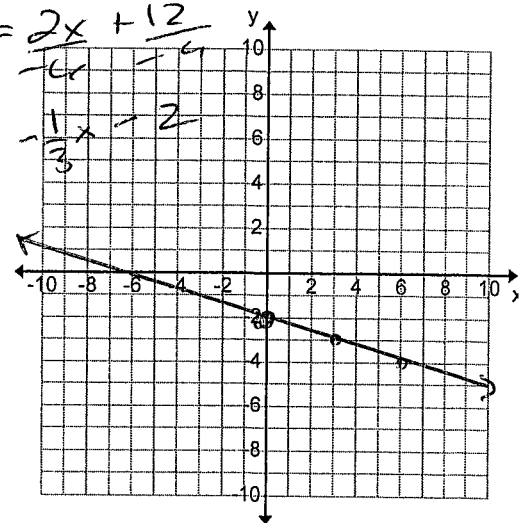
28)  $\frac{3y}{3} = \frac{x+6}{3} \cdot \frac{1}{3}$

$y = \frac{1}{3}x + 2$



29)  $-2x - 6y = 12$

$$\begin{array}{r} -6y = 2x + 12 \\ \hline -6 \quad -6 \quad -6 \\ y = -\frac{1}{3}x - 2 \end{array}$$



30) Which of the following is a linear function?

a)  $y = \sqrt{x} + 3$

b)  $y = x^3 + 1$

c)  $y = x + 5$

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

31) Circle the linear functions.

