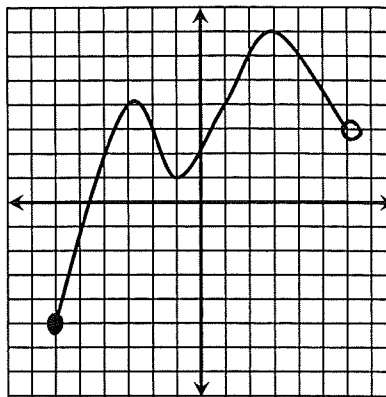


Names: \_\_\_\_\_

1. Use the graph of  $f(x)$  at the right to answer the following questions.



- a) Is the relation a function? 1a. YES or NO \_\_\_\_\_
- b) State the domain in interval notation. 1b. \_\_\_\_\_
- c) State the range in interval notation. 1c. \_\_\_\_\_
- d) Find  $f(-5)$  1d. \_\_\_\_\_
- e) Find  $f(x)=6$  1e. \_\_\_\_\_

2. Is the following set of ordered pairs considered a function?

<b>Input</b>	$\pm 3$	-5	0	4	6
<b>Output</b>	3	-2	0	5	9

- 2. YES or NO \_\_\_\_\_
- 3. Classify  $\sqrt{2}$ . Name all of them 3. \_\_\_\_\_
  - a) real
  - b) rational
  - c) irrational
  - d) integer
  - e) whole
  - f) natural

- 4. Classify  $-\frac{4}{2}$ . Name all of them 4. \_\_\_\_\_
  - a) real
  - b) rational
  - c) irrational
  - d) integer
  - e) whole
  - f) natural

5. Given the relation:  $\{(-3,4), (-5,2), (4,1), (-3,2), (2,-1)\}$   
Find a) the domain, b) the range d) is it a function

5a. \_\_\_\_\_

5b. \_\_\_\_\_

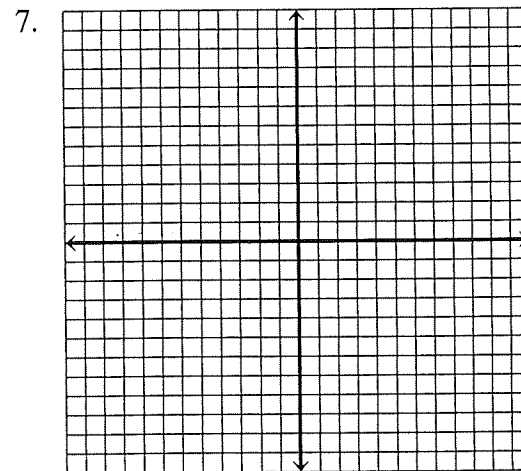
5c. \_\_\_\_\_

6. Find (a) the slope, and (b) the y-intercept  
 $-3x + 4y = -24$

6a. \_\_\_\_\_

6b. \_\_\_\_\_

7. Sketch the graph of  $4x - 3y = 9$   
PLOT 4 POINTS!



8. Find the equation of the line passing through the points (10, 8) and (5, -2). Put your answer in SLOPE-INTERCEPT FORM.

8. \_\_\_\_\_

9. Find the equation of the line with a slope of  $-\frac{1}{5}$  that passes through the point (3, -5). Put your answer in POINT-SLOPE FORM.

9. \_\_\_\_\_

10. Find an equation for the line passing through  $(-2, 3)$  that is perpendicular to the line  $10x + 2y = -3$ . Put your answer in slope intercept form.

10. \_\_\_\_\_

11. Which best describes the relationship between the line through E and F and the line through G and H? Are they parallel, perpendicular or neither? Why?  $E=(-4,-5)$ ,  $F=(-7,-3)$  and  $G=(8,1)$ ,  $H=(5,3)$

11. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12. Rewrite  $y = \frac{3}{5}x + 2$  in Standard Form

12. \_\_\_\_\_

13. Find a number  $t$  such that the line passing through the two points  $(t, 6)$  and  $(4, -4t + 6)$  and has a slope of 2.

13. \_\_\_\_\_

14. In 1955, First Class Auto paid its employees \$55,000 each year. In 1970 the annual salary was \$66,700. The salaries increased linearly.

a) Write a linear model for the data, with  $x=0$  corresponding to 1955.

14a. \_\_\_\_\_

b) Estimate the salary in 1985.

14b. \_\_\_\_\_

15. A toy company has fixed costs of \$50,000 and it has variable costs are \$8 per toy. Write a) an equation that gives the total cost  $y$  of producing  $x$  toys,  
b) determine the total cost of making 12,000 toys and  
c) find the average cost to produce 1 toy if 12,000 toys were made.

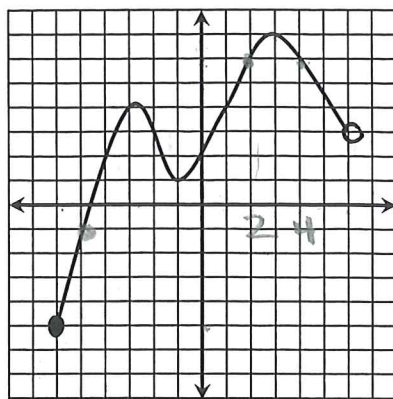
15a. \_\_\_\_\_

15b. \_\_\_\_\_

15c. \_\_\_\_\_

52

Names: \_\_\_\_\_



1. Use the graph of  $f(x)$  at the right to answer the following questions.

a) Is the relation a function?

1a. YES or NO +1

b) State the domain in interval notation.

1b.  $[-6, 6)$  +3

c) State the range in interval notation.

1c.  $[-5, 7]$  +3

d) Find  $f(-5) = y$

1d. -1 +1

e) Find  $f(x) = 6$

1e.  $(2, 4)$  +1

2. Is the following set of ordered pairs considered a function?

<b>Input</b>	$\pm 3$	-5	0	4	6
<b>Output</b>	3	-2	0	5	9

2. YES or NO +1

3. Classify  $\sqrt{2}$ . Name all of them

- a) real
- b) rational
- c) irrational
- d) integer
- e) whole
- f) natural

3. a, c +2

4. Classify  $-\frac{4}{2}$ . Name all of them

- a) real
- b) rational
- c) irrational
- d) integer
- e) whole
- f) natural

-2

0, 1, 2, 3  
1, 2, 3, 4

4. a, b, d +3

5. Given the relation:  $\{(-3,4), (-5,2), (4,1), (-3,2), (2,-1)\}$   
 Find a) the domain, b) the range d) is it a function

least  $\rightarrow$  greatest  
 Do not repeat!

5a. d:  $\{-5, -3, 2, 4\}$  +2  
 5b. r:  $\{-1, 1, 2, 4\}$  +2  
 5c. NO +1

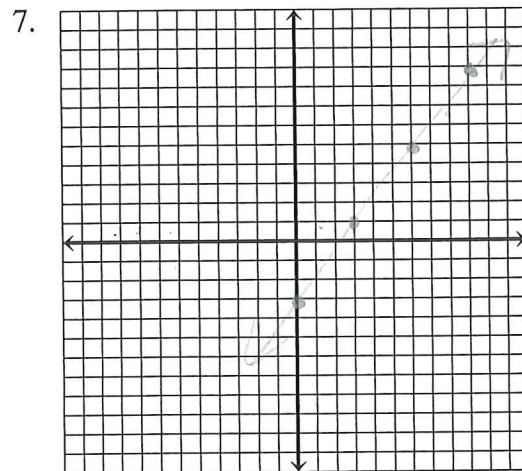
6. Find (a) the slope, and (b) the y-intercept  
 $-3x + 4y = -24$

$$\frac{4y}{4} = \frac{3x-24}{4}$$

6a.  $\frac{3}{4}$  +1  
 6b. -6 +1

7. Sketch the graph of  $4x - 3y = 9$   
PLOT 4 POINTS!

$$\begin{aligned} -3y &= -4x + \frac{9}{3} \\ y &= \frac{4}{3}x - 3 \end{aligned}$$



+3

8. Find the equation of the line passing through the points (10, 8) and (5, -2). Put your answer in SLOPE-INTERCEPT FORM.

$$m = \frac{8+2}{10-5} = \frac{10}{5} = 2$$

8.  $y = 2x - 12$  +3

$$\begin{aligned} y - 8 &= 2(x - 10) \\ y - 8 &= 2x - 20 \end{aligned}$$

9. Find the equation of the line with a slope of  $-\frac{1}{5}$  that passes through the point (3, -5). Put your answer in POINT-SLOPE FORM.

9.  $y + 5 = -\frac{1}{5}(x - 3)$  +3

(10)

10. Find an equation for the line passing through (-2, 3) that is perpendicular to the line  $10x + 2y = -3$ . Put your answer in slope intercept form.

$$m = \frac{-10}{2} = -5 \quad \perp m = \frac{1}{5}$$

$$y - 3 = \frac{1}{5}(x + 2)$$

$$5y - 15 = x + 2$$

10.  $y = \frac{1}{5}x + \frac{17}{5}$  +3

11. Which best describes the relationship between the line through E and F and the line through G and H? Are they parallel, perpendicular or neither? Why? E=(-4,-5), F=(-7,-3) and G=(8,1), H=(5,3)

$$\frac{-5+3}{-4+7} = \frac{-2}{3}$$

$$\frac{3-1}{5-8} = \frac{2}{-3}$$

11. parallel  
same  
slope +3

12. Rewrite  $y = \frac{3}{5}x + 2$  in Standard Form

$$5y = 3x + 10$$

$$-3x + 5y = 10$$

12.  $3x - 5y = -10$  +3

13. Find a number t such that the line passing through the two points (t, 6) and (4, -4t + 6) and has a slope of 2.

$$\frac{6 - (-4t + 6)}{t - 4} = 2$$

$$\frac{6 + 4t - 6}{t - 4} = \frac{2}{1}$$

13. -4 +3

$$\begin{aligned} 2t - 8 &= 4t \\ -8 &= 2t \\ -4 &= t \end{aligned}$$

14. In 1955, First Class Auto paid its employees \$55,000 each year. In 1970 the annual salary was \$66,700. The salaries increased linearly.

a) Write a linear model for the data, with  $x=0$  corresponding to 1955.

- 0 (1955, 55,000)
- 5 (1970, 66,700)

$$\frac{11,700}{15}$$

+3

14a.  $y = 780x + 55,000$

b) Estimate the salary in 1985.

$$x = 30$$

$$y = 780(30) + 55,000$$

14b. \$78,400 +1

15. A toy company has fixed costs of \$50,000 and it has variable costs are \$8 per toy. Write a) an equation that gives the total cost  $y$  of producing  $x$  toys, b) determine the total cost of making 12,000 toys and c) find the average cost to produce 1 toy if 12,000 toys were made.

+3

15a.  $y = 8x + 50,000$

15b. 146,000 +1

15c. \$12.17 +1

$$8(12,000) + 50,000$$

$$\frac{146,000}{12,000} = \$12.17$$

9