Math 1

Name __Key__

Unit 3 Review Sheet

Match each story to its graph.

1. Larry leaves from home in his dad's car going to school. He stays there for a bit and then heads home on foot. Then he gets to his friend's house and rides their bike the rest of the way home. **B**

2. Bob rides his bike to his mom's work for fun. Then when he gets there, he puts the bike in her car and rides home with her from work. **D**

3. Marcos starts at his neighbor's house and rides with them to the elementary school. Then he walks to the high school which is closer to his house. Then he stays at school for the day and then rides the bus back home. **A**

4. Buttercup walks to the bus stop and then rides the bus to school and stays for the day. **C**

A. #3

B. #1

C. #4

D. #2
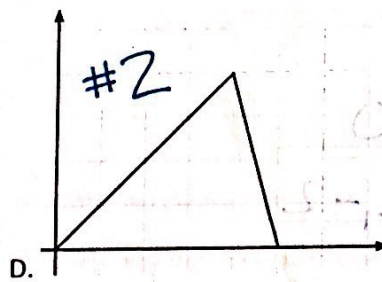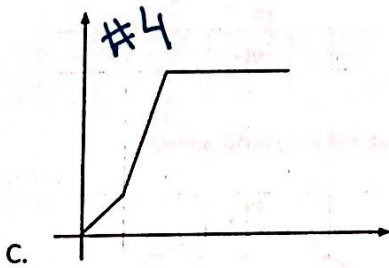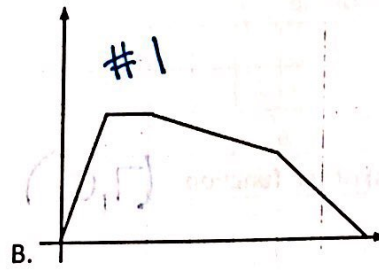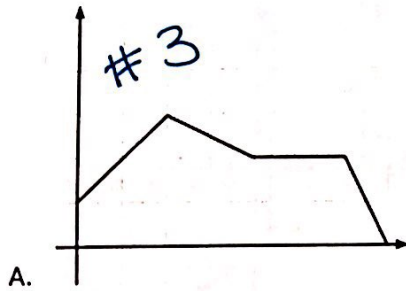
5. The scale along each axis is 1. Use the graph to answer the following questions. Assume the scale is 1.

   a. When does $f(x) = g(x)$? $(-6, 1)$ ✗

   b. $f(-1) = 6$

   c. $g(-1) = -3$
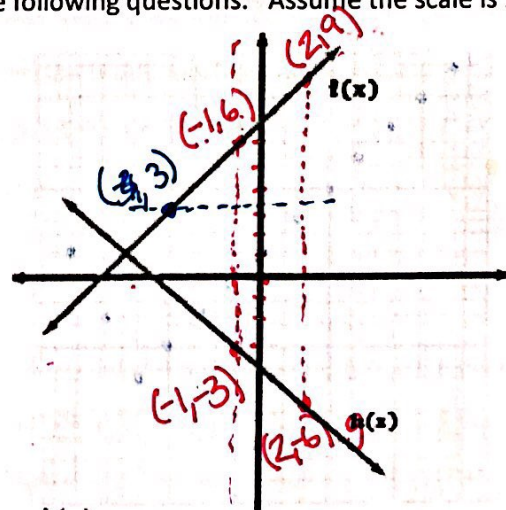
   d. $f(-1) + g(-1) = 3$

   e. If $f(x) = 3, x = -4$

   f. If $g(x) = 3, x = -8$

   g. $f(2) = 9$

   h. $g(2) = -6$

   i. $f(2) + g(2) = 3$

Use the graph below to answer questions 6 – 13.

6. Identify the domain of the function, using interval notation.

$[-12, 12]$

7. Identify the range of the function, using interval notation.

$[-6, 8]$
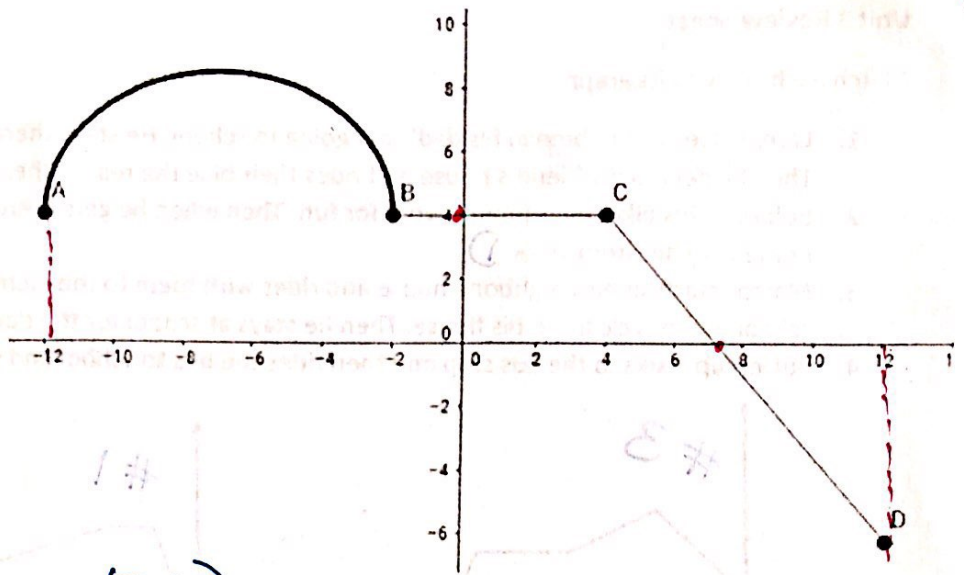
8. Identify the y-intercept(s) of the function.

(0,4)

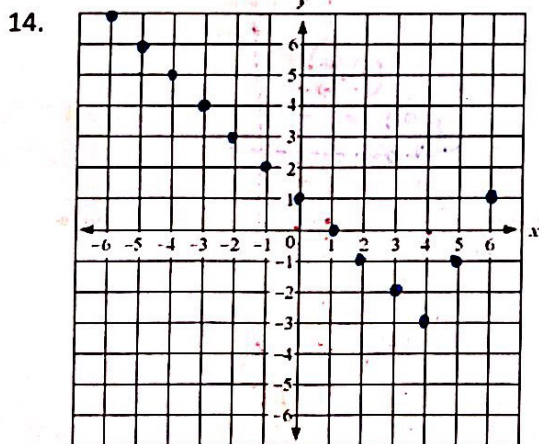9. Identify the x-intercept(s) of the function. (7,0)

10. Find f(4). 4
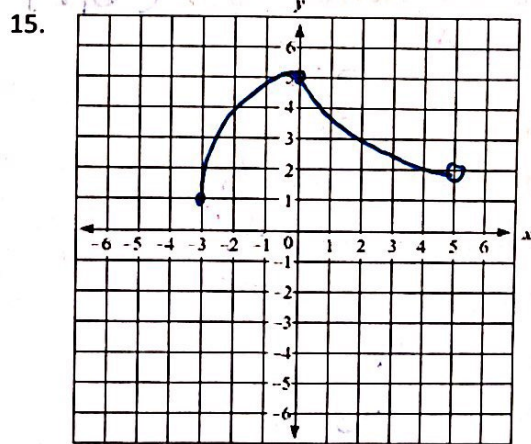
11. Find f(12). −6

12. If f(x) = -4, then x = ___10___
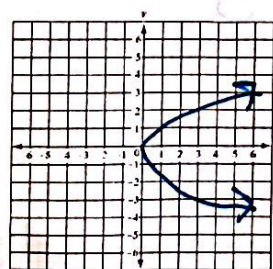
13. If f(x) = 6, then x = −12, −2

14. Draw an example of a discrete graph that is increasing on (4,6) and decreasing on (-6,4)

X X

14.

15. Draw an example of a continuous graph that has a domain of [-3,5) and range of [1,5]

15.

16. Draw an example of a graph that is NOT a function.
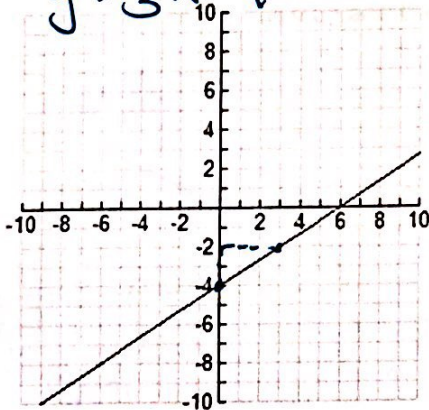
Write an explicit equation for each situation:

17. An exponential function with f(1)=5 and a common ratio of 3. $f(x) = 5(3)^{x-1}$

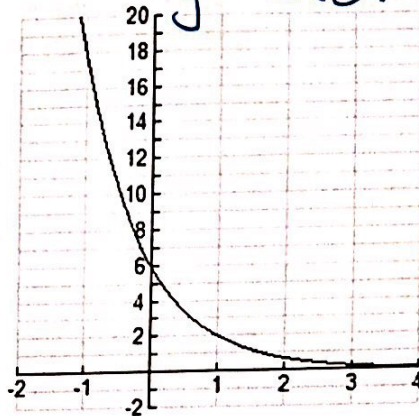18. Jordan started with $50 and is spending $5 per day. $f(x) = 50 - 5x$

19. The car originally cost $15,000 and is losing 14% of its value every year. $f(x) = 15,000(.86)^x$

20. A linear function with a slope of -4 and containing the point (9,-3) $y = -3 - 4(x-9)$
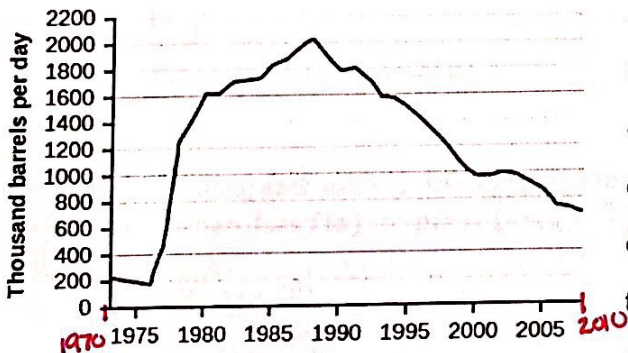
21. $y = \frac{2}{3}x - 4$

22. $y = 6(\frac{1}{3})^x$

x	y
0	6
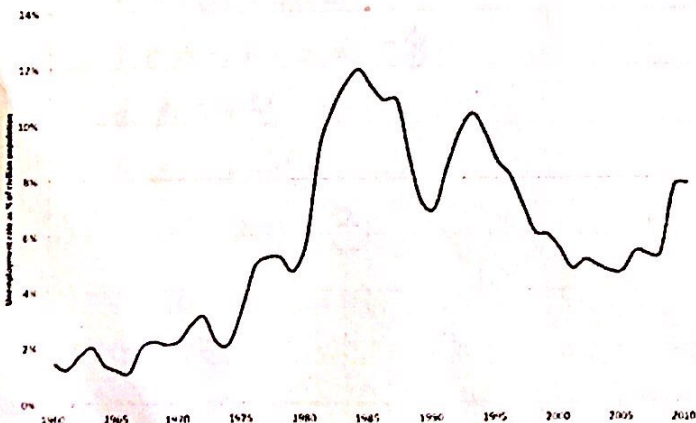| 1 | 2 | $2 \cdot \frac{1}{3}$

23.

Alaska Crude Oil Production

a. When did production reach a maximum? 1987

b. What was the maximum production? 2000 thousand gallons

c. When was the production increasing? 1976-1987

d. When was the production decreasing? 1987-2008

e. When did the production reach a minimum? 1976

f. What is the domain? [1970, 2010]

g. What is the range? [200, 2000]

24.

UK unemployment 1960-2010

a. When did the unemployment reach a maximum? 1985

b. When was unemployment increasing the fastest? 2005-2010

c. When was unemployment decreasing the fastest?

d. When was unemployment decreasing the slowest? 1963-1967

e. What was the maximum unemployment? 12%

f. What was the minimum unemployment after 1995? 5%