

SHOW ALL WORKS ON SEPARATE PAPER  
 NAME \_\_\_\_\_  
 DATE \_\_\_\_\_  
 ANSWER \_\_\_\_\_  
 CHAPTER 12

Find the domain or range for each problem as directed. (DOK 2)

1. What is the domain of the following relation?  $\{(-1, 2), (2, 5), (4, 9), (6, 11)\}$
2. What is the range of the following relation?  $\{(0, -2), (-1, -4), (-2, 6), (-3, -8)\}$
3. Find the range of the relation  $y = 5x$  for the domain  $\{0, 1, 2, 3, 4\}$ .
4. Find the range of the relation  $y = \frac{3(x-2)}{5}$  for the domain  $\{-8, -3, 7, 12, 17\}$ .
5. Find the range of the relation  $y = 10 - 2x$  for the domain  $\{-8, -4, 0, 4, 8\}$ .
6. Find the range of the relation  $y = \frac{4+x}{3}$  for the domain  $\{-7, -1, 2, 5, 8\}$ .

For each of the following relations given in questions 7-11, write F if it is a function and NF if it is not a function. (DOK 1)

7.  $\{(1, 2), (2, 2), (3, 2)\}$
8.  $\{(-1, 0), (0, 1), (1, 2), (2, 3)\}$
9.  $\{(2, 1), (2, 2), (2, 3)\}$
10.  $\{(1, 7), (2, 5), (3, 6), (2, 4)\}$
11.  $\{(0, -1), (-1, -2), (-2, -3), (-3, -4)\}$

For questions 12-15, find the range of the following functions for the given value of the domain. (DOK 2)

12. For  $H(x) = 2x(x-1)$ ; find  $H(4)$
13. For  $h(x) = x(x-4)$ ; find  $h(3)$
14. For  $f(x) = x+11$ ; find  $f(x+1)$
15. For  $f(x) = 4x$ ; find  $f(x+c)$

Fill in the following function tables. (DOK 2) and graph

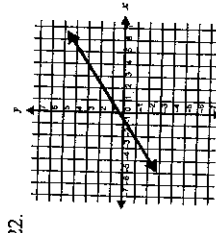
16. Rule: $\frac{(4-2n)}{2}$		17. Rule: $2n(n+1)$		18. Rule: $6n-3$	
$n$	$f(n)$	$n$	$f(n)$	$n$	$f(n)$
0		0		2	
1		1		3	
2		2		4	
3		3		5	
4		4		6	

For questions 19-22, tell whether the relation or function is linear or non-linear. (DOK 1)

19.  $\{(1, 2), (3, 7), (4, 5)\}$

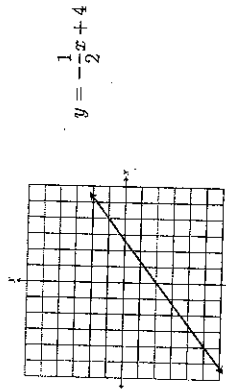
20.  $y = x^2 + x + 2$

21. $x$	$y$
-2	6
-1	5
1	3
2	2



(DOK 3)

23. Compare the graph below to the function.

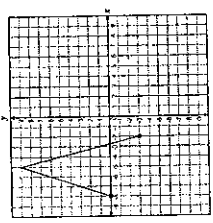


State the domain and range of the graph and function.

24  
4. Which inequality represents the range of the exponential function  $f(x) = 2\left(\frac{1}{2}\right)^x$ ?

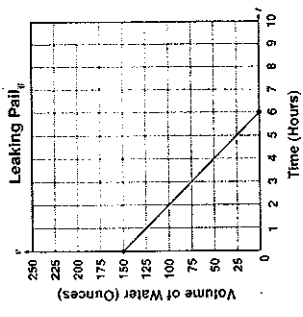
- A.  $y \leq 0$  or  $y \geq 0$
- B.  $0 < y \leq 1$
- C.  $y \leq 2$
- D.  $y > 0$

5. Which inequality represents the range of the relation graphed below?



- A.  $y \geq -8$
- B.  $y \leq 9$
- C.  $-3 \leq y \leq 9$
- D.  $-8 \leq y \leq -2$

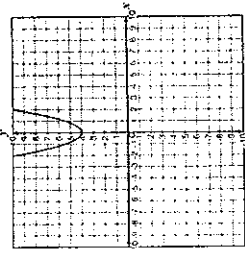
26  
7. A pail of water containing 150 ounces has a slow leak. The graph shows the amount of water in the pail after each hour.



Which option correctly describes both the domain and range?

- A. Domain:  $t \geq 0$   
Range:  $v \geq 0$
- B. Domain:  $t \leq 6$   
Range:  $v \leq 150$
- C. Domain:  $0 \leq t \leq 6$   
Range:  $0 \leq v \leq 150$
- D. Domain:  $6 \leq t \leq 150$   
Range:  $6 \leq v \leq 150$

27  
11. A quadratic function is shown in the graph below.



Which of the following best describes the range of the function?

- A. all real numbers
- B. all real numbers less than or equal to 0
- C. all real numbers less than or equal to 4
- D. all real numbers greater than or equal to 4

27  
15. What is the value of  $f(-2)$  for the function  $f(x) = \frac{1}{3}x - 4$ ?

- A.  $-\frac{17}{3}$
- B.  $-\frac{14}{3}$
- C.  $-\frac{10}{3}$
- D.  $\frac{22}{3}$

30  
16. An electrician's shop charges a \$55 service fee plus \$50 per hour for labor. The linear equation that models this is  $c = \$50h + \$55$ , where  $h$  is the number of labor hours and  $c$  is the total cost. How much would the shop charge a customer for a job that takes 17 hours?

- A. \$850
- B. \$905
- C. \$985
- D. \$1,785

28  
12. Which number is a value in the range of the equation  $y = x^2 + 7$  for the domain of  $\{-2, 5, 6\}$ ?

- A. 3
- B. 7
- C. 11
- D. 19

SOLVE AND GRAPH

$$31.) |x - 5| \geq 3$$

$$32.) |4k - 2| = 11$$

$$33.) |2f + 9| \leq 13$$

$$34.) |y + 8| \geq 3$$

35.) SOLVE. WRITE  
SOLUTION AS  
UNION OR  
INTERSECTION

$$|3x - 5| < 14$$

36.) WRITE THE  
SOLUTION OF  
THE INEQUALITY  
IN SET BUILDER  
NOTATION.

$$7 - 3d \geq 28$$