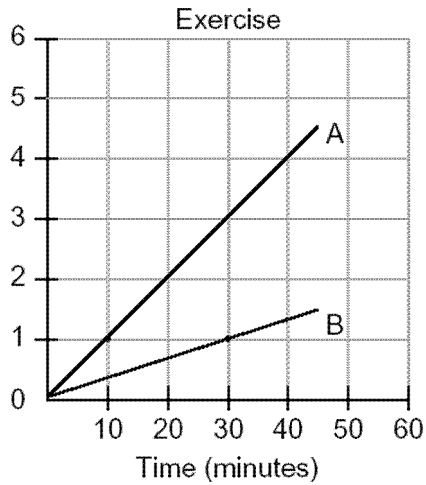


Keystone Review – Relations & Functions

Name: _____

Date: _____

1. During a 45-minute lunch period, Albert (*A*) went running and Bill (*B*) walked for exercise. Their times and distances are shown in the accompanying graph. How much faster was Albert running than Bill was walking, in miles per hour?

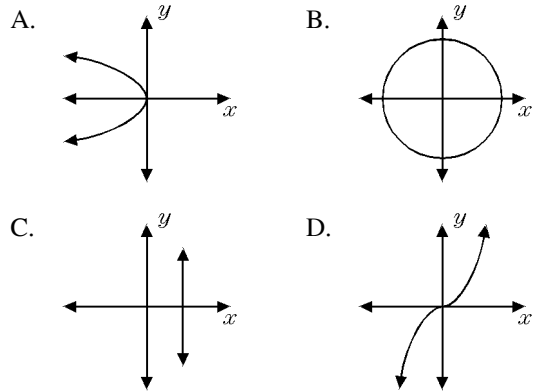


2. If x and y are defined as indicated by the accompanying table, which equation correctly represents the relationship between x and y ?

x	y
2	1
3	3
5	7
7	11

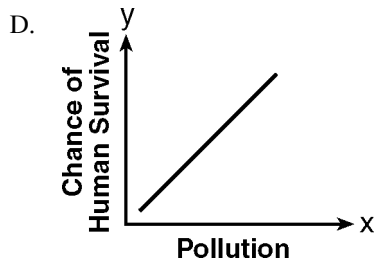
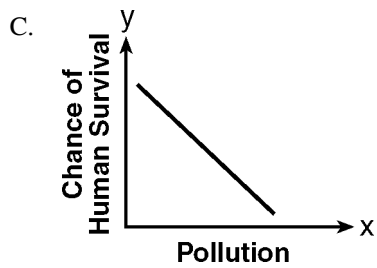
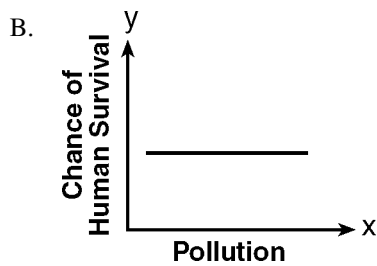
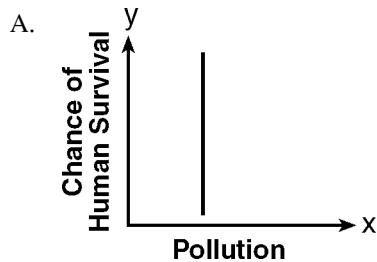
- A. $y = x + 2$ B. $y = 2x + 2$
 C. $y = 2x + 3$ D. $y = 2x - 3$

3. Which graph represents a function?



Keystone Review – Relations & Functions

4. Which graph does *not* represent a function of x ?



5. Which relation is also a function?

A. $x^2 + y^2 = 64$ B. $x^4 + 4y^2 = 64$

C. $x^2 - 4y^2 = 64$ D. $xy = 64$

6. Which relation is *not* a function?

A. $y = 2x + 4$ B. $y = x^2 - 4x + 3$

C. $x = 3y - 2$ D. $x = y^2 + 2x - 3$

7. Given the relation $R = \{(-2, 3), (a, 4), (1, 9), (0, 7)\}$. Which placement for a makes this relation a function

- A. 1 B. -2 C. 0 D. 4

8. Which set of ordered pairs is *not* a function?

A. $\{(3, 1), (2, 1), (1, 2), (3, 2)\}$

B. $\{(4, 1), (5, 1), (6, 1), (7, 1)\}$

C. $\{(1, 2), (3, 4), (4, 5), (5, 6)\}$

D. $\{(0, 0), (1, 1), (2, 2), (3, 3)\}$

9. If $f(x) = 3 - x^2$, find $f(-2)$.

10. If $f(x) = |x^3 - 3|$, then $f(-1)$ is equivalent to

- A. 0 B. 2 C. -2 D. 4

11. If $f(x) = \sqrt{25 - x^2}$, find the value of $f(3)$.

Keystone Review – Relations & Functions

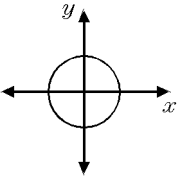
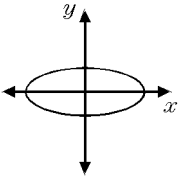
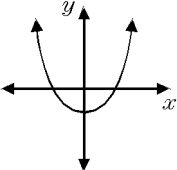
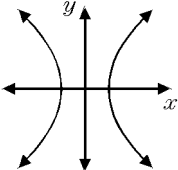
12. What is the domain of the function $f(x) = \frac{4}{\sqrt{x+1}}$ over the set of real numbers?

- A. $\{x \mid x = 1\}$ B. $\{x \mid x \geq -1\}$
 C. $\{x \mid x < -1\}$ D. $\{x \mid x > -1\}$

13. In which function is the range equal to the domain?

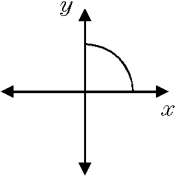
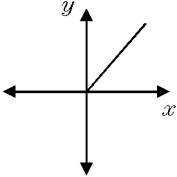
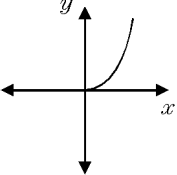
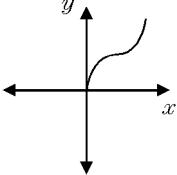
- A. $y = 2^x$ B. $y = x^2$
 C. $y = \log x$ D. $y = x$

14. Which graph illustrates a quadratic relation whose domain is all real numbers?

- A.  B. 
 C.  D. 

15. If y varies directly as x and $y = 32$ when $x = 4$, find the value of y when $x = 5$.

16. Which graph illustrates the relationship x varies directly as y ?

- A.  B. 
 C.  D. 

17. Which table is an example of y varying directly with x .

A.

x	3	4	5
y	5	6	7

B.

x	3	4	5
y	5	4	3

C.

x	3	4	6
y	9	16	25

D.

x	3	4	5
y	6	8	10

- | | |
|---------|----|
| 1. | |
| Answer: | 4 |
| 2. | |
| Answer: | D |
| 3. | |
| Answer: | D |
| 4. | |
| Answer: | A |
| 5. | |
| Answer: | D |
| 6. | |
| Answer: | D |
| 7. | |
| Answer: | D |
| 8. | |
| Answer: | A |
| 9. | |
| Answer: | -1 |
| 10. | |
| Answer: | D |
| 11. | |
| Answer: | 4 |
| 12. | |
| Answer: | D |
| 13. | |
| Answer: | D |
| 14. | |
| Answer: | C |
| 15. | |
| Answer: | 40 |
| 16. | |
| Answer: | B |
| 17. | |
| Answer: | D |