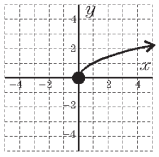
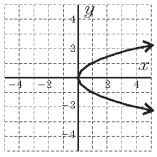
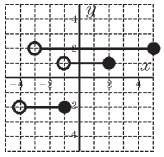
MATH 10

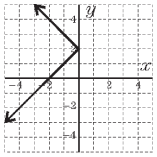
FUNction Practice TEST

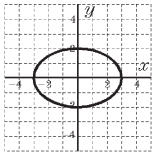
1. Which of the following is a function?

a. 

b. 

c. 

d. 

e. 

2. State the domain of the function.

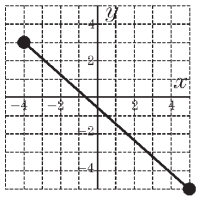
a. $x \geq -4$

b. $-4 \leq x \leq 5$

c. $-5 \leq x \leq 3$

d. $x \leq 3$

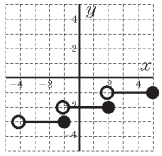
e. $\{-4, -3, -2, -1, 0, 1, 2, 3, 4, 5\}$



3. What is the domain of the function shown?

a. $-1, -2, -3$ b. $-4 < x \leq 5$ c. $-4, -1, 2, 5$

d. $-3 \leq y \leq -1$ e. $-4 \leq x < 5$

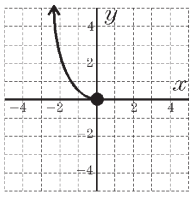


4. What is the range of the function shown?

a. $x \geq 0$ b. $y \geq 0$

c. $x \leq 0$ d. $y \leq 0$

e. all real numbers

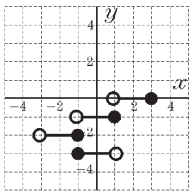


5. What is the range of the relation shown?

a. $-3, -2, -1, 0$ b. $-3 < y \leq 0$

c. $-3 < x \leq 3$ d. $-1 \leq x \leq 1$

e. $-3 < y \leq 3$



6. For $y = \dfrac{4}{7-x}$, state the domain.

a. $\varnothing$ b. $\mathbb{R}$ c. $\mathbb{R}, x \neq 0$ d. $\mathbb{R}, x \neq 7$ e. $\mathbb{R}, y \neq 7$

7. For $8y = 4x + 3$, state the domain.

a. all real numbers b. $-\frac{1}{2} \leq x \leq \frac{1}{2}$

c. $-\frac{1}{2} < x < \frac{1}{2}$ d. $-\frac{3}{8} \leq x \leq \frac{3}{8}$

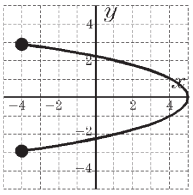
e. $-\frac{3}{8} < x < \frac{3}{8}$

8. State the range of the relation.

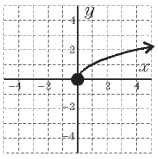
a. $-4 \leq y \leq 5$ b. $-3 \leq y \leq 3$

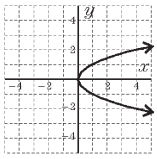
c. $y \in \mathbb{R}$ d. $y \leq 5$

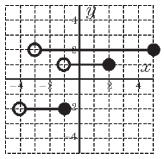
e. $\{-3, -2, -1, 0, 1, 2, 3\}$

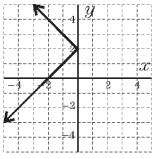


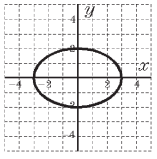
9. Which of the following is a function?

a. 

b. 

c. 

d. 

e. 

10. Which of the following relations is a function?

a. $\{(5,-7),\ (-7,5),\ (5,0)\}$ b. $\{(4,8),\ (8,4),\ (-4,4)\}$

c. $x = y^4 - 3$ d. $x^4 = y^4$

e. $x - 5 = 0$

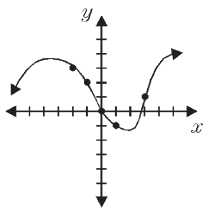
11. Which of the following relations is a function?

a. $3x + 7 = 27$ b. $x^2 + y^2 = 16$ c. $x^2 - y^2 = 16$

d. $3x + 4y = 12$ e. $x - y^2 = 4$

12. If the graph shown is the graph of $y = f(x)$ what is the value of $f(3)$?

a. -2 b. -1 c. 1 d. 2 e. 3



13. Which of the following is an expression, $f(x)$, for which $f(-3) = 7$?

a. $f(x) = 2x^2 - 5$ b. $f(x) = x^2 - 2$ c. $f(x) = 4x - 9$

d. $f(x) = 3x + 2$ e. $f(x) = 2\sqrt{-3x} + 1$

14. For $f(x) = 2x - 3x^2$, evaluate $f(-3)$.

a. -33 b. -21 c. 6 d. 21 e. 33

15. If $F(x) = 4x - 6$ what is the value of $F\left(\frac{7x}{8}\right)$?

a. $\frac{3}{2}$ b. $\frac{7}{2}x - 6$ c. $2x - 6$ d. $2x - 3$ e. $6 - 2x$

16. For the function, $f(x) = 3x^2 + \dfrac{1}{2x}$, determine $f(-2)$.

a. $-\frac{49}{4}$ b. $-\frac{47}{4}$ c. $\frac{47}{4}$ d. $\frac{49}{4}$ e. $\frac{143}{4}$

17. For $f(x) = \frac{2}{5}x - 6$, determine $10f(x)$.

a. $10x - 60$ b. $10x - 6$ c. $4x - 6$ d. $20x - 60$ e. $4x - 60$

18. Given $g(x) = 2(x - 5)$, determine x for $g(x) = -30$.

a. -30 b. -20 c. -10 d. $-\frac{35}{2}$ e. $-\frac{35}{2}$

19. If b varies directly as a, and $a = 30$ when $b = 6$, write b as a function of a.

a. $b = \frac{1}{5}a$ b. $b = 5a$ c. $b = 30a + 6$
d. $b = 5a + 6$ e. $b = 6a + 30$

20. The cost of traveling varies directly as the distance traveled. If it costs \$2520 to fly 3200 km, how much would it cost to fly 5000 km?

a. \$3515.63 b. \$3937.50 c. \$4267.18
d. \$6439.21 e. \$6349.21

21. If $f(x) = 2x^2 + 3$ and $g(x) = 3X - 4$, then $f(1) - g(-3) =$

a. 0 b. 4 c. -8 d. -4 e. 1