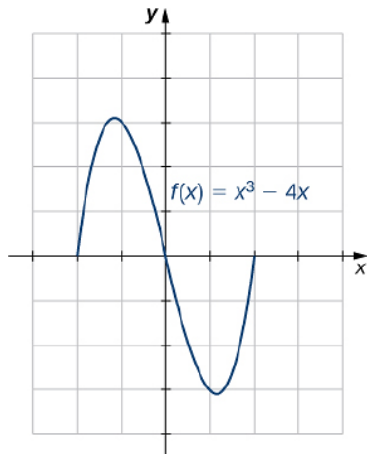


1. For the function $f(x) = 3x^2 + 2x - 1$, evaluate $f(-2)$.

- A. 7
- A. 14
- A. -7
- A. -14

Answer: A (2)

2. Consider the graph,

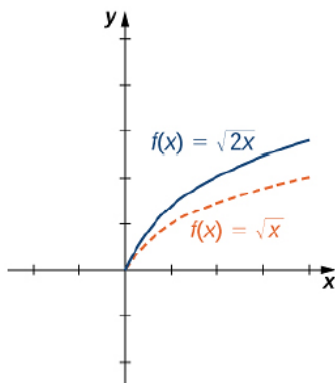


This graph is symmetrical about _____. The function represents a _____ function.

- A. x-axis, odd
- A. y-axis, even
- A. origin, odd
- A. origin, even

Answer: C (2)

3. What type of transformation of function does the graph represent?



- A. Rotation
- A. Horizontal scaling
- A. Vertical scaling
- A. Shrinking

Answer: B (2)

4. Let $f(x) = x^8 + 5$

What type of function does $f(x)$ represent?

- A. Inverse function
- A. Exponential function
- A. Power function
- A. Composite function

Answer: C (2)

5. What type of function does the table represent?

x	y
-2	-2
-1	-1
0	0
1	1
2	2

- A. Constant function
- A. Power function
- A. Absolute value function
- A. Identity function

Answer: D (2)

6. Consider the following

$$Y = 4x + 7$$

Now a transformation is performed as:

$$Y = 3(4x + 7)$$

What effect will this have on the graph of y ?

- A. Stretch vertically
- A. Shrink vertically
- A. Stretch horizontally
- A. Shrink horizontally

Answer: A (2)

7. The value of $\left[\frac{3^x - 2^x}{\log(1+x)} \right]$ is

- A. $\log(2/3)$
- B. $\log(3/2)$
- C. $\log 6$

D. e

Answer - B

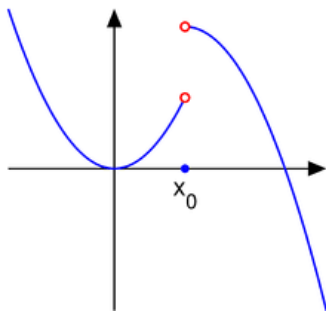
8. Compute the value of

$$\lim_{x \rightarrow -4} (5x^2 + 8x - 3)$$

- a. 22
- a. 0
- a. 45
- a. None of these

Answer - C (2)

9. Identify the type of discontinuity:



- a. Jump discontinuity
- a. Infinite discontinuity
- a. Removable discontinuity
- a. None of these

Answer - A (2)

10. For what values of x is the following function discontinuous?

$$f(x) = \frac{x+1}{x-5}$$

- a. 5
- a. 2
- a. 10
- a. 0

Answer - A (2)

11. Which of the following is not a condition of continuity?

- a. The function is defined at $x = a$; that is, $f(a)$ equals a real number
- a. The limit of the function as x approaches a exists
- a. The limit of the function as x approaches a is equal to the function value at $x = a$
- a. None

Answer – D (2)

12. If $\left[\frac{x^k - 5^k}{x - 5} \right] = 500$ then possible value of k is

- A. 4
- B. 3
- C. 2
- D. 5

Answer – A

13. Value of $\left[\frac{\sqrt{1+x}-1}{x} \right]$ is

- A. 1
- B. $\frac{1}{2}$
- C. 2
- D. None

Answer - B

14. The value of $\left[\sqrt{x^4 + 4x^2} - x^2 \right]$ is

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

Answer – D

15. Which transformation does the function $y = 2x^2$ undergo to become $y = -2(x - 1)^2 + 3$?

- a) Horizontal translation to the left by 1 unit and vertical reflection
- b) Vertical translation upward by 3 units and horizontal reflection
- c) Vertical translation downward by 3 units and horizontal translation to the right by 1 unit
- d) Horizontal translation to the right by 1 unit and vertical translation downward by 3 units

Solution: option d. (2)