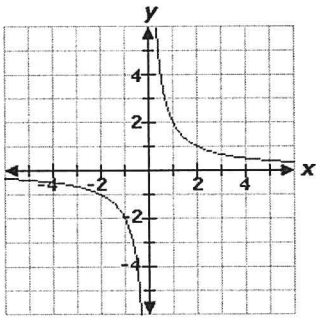
Transformations and Even/Odd Practice

1. What type of function is graphed below?



- A. odd function
- B. even function
- C. not a function
- D. neither even nor odd

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2. Consider the function $f(x) = \frac{1}{x}$ and the function $g(x)$ shown below.

How will the graph of $g(x)$ differ from the graph of $f(x)$?

$$g(x) = \frac{1}{3} \cdot f(x) = \frac{1}{3x}$$

- A. The graph of $g(x)$ is the graph of $f(x)$ compressed vertically by a factor of $\frac{1}{3}$.
- B. The graph of $g(x)$ is the graph of $f(x)$ shifted down $\frac{1}{3}$ of a unit.
- C. The graph of $g(x)$ is the graph of $f(x)$ shifted to the left $\frac{1}{3}$ of a unit.
- D. The graph of $g(x)$ is the graph of $f(x)$ stretched vertically by a factor of 3.

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3. Determine whether the function below is an even function, an odd function, both, or neither.

$$f(x) = 4e^{x} + 16e^{-x}$$

- A. odd function
- B. neither even nor odd
- C. both even and odd
- D. even function

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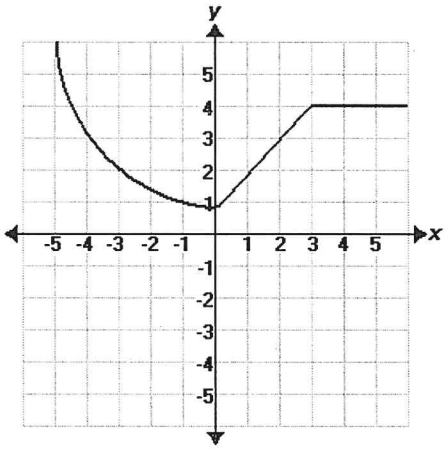
4. What type of function is graphed below?



- A. even function
- B. neither even nor odd
- C. not a function
- D. odd function

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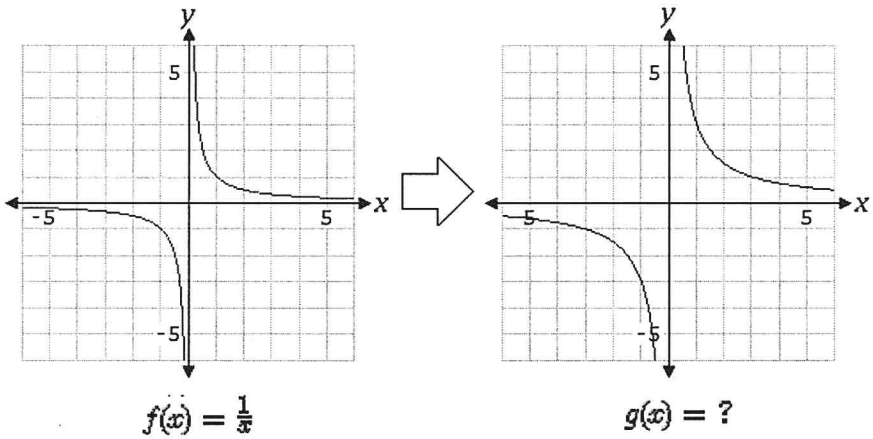
5. Determine whether the function below is an even function, an odd function, both, or neither.

$$f(x) = e^{8x} + e^{-8x}$$

- A. neither even nor odd
- B. both even and odd
- C. even function
- D. odd function

6.



$f(x) = \frac{1}{x}$ $g(x) = ?$

Which of the following is equal to $g(x)$?

- A. $\frac{1}{x+2}$
- B. $\frac{1}{8x}$

○ C. $\frac{1}{x}+2$

○ D. $\frac{3}{x}$

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7. Each statement below describes a transformation of the graph of $f(x) = x^3$.

Which statement correctly describes the graph of $g(x) = (x + 4)^3 + 1$?

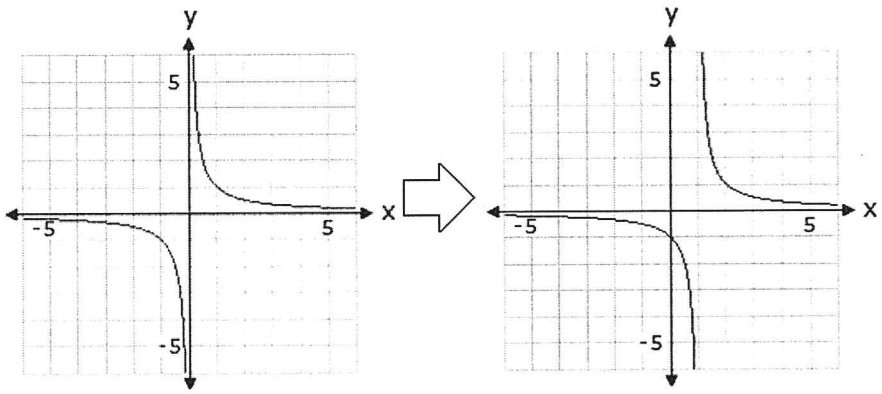
○ A. The graph of $g(x)$ is the graph of $f(x)$ translated one unit up and four units right.

○ B. The graph of $g(x)$ is the graph of $f(x)$ translated one unit down and four units right.

○ C. The graph of $g(x)$ is the graph of $f(x)$ translated one unit up and four units left.

○ D. The graph of $g(x)$ is the graph of $f(x)$ translated one unit down and four units left.

8.



Which of the following is equal to $g(x)$?

○ A. $\frac{1}{x+1}$

○ B. $\frac{-1}{x-1}$

○ C. $\frac{1}{x}+1$

○ D. $\frac{1}{x}-1$

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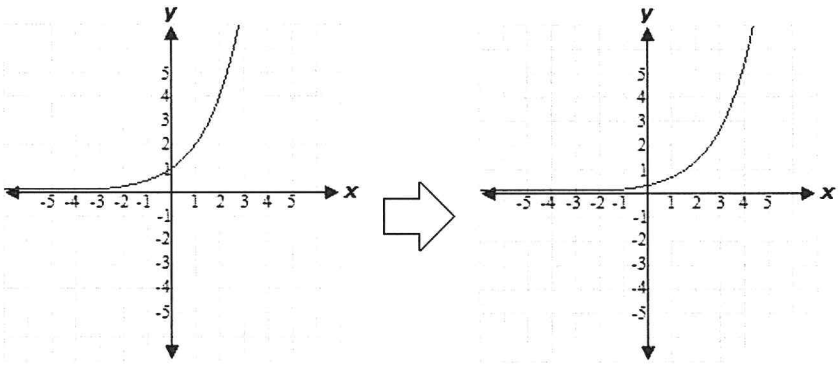
9. Each statement below describes a transformation of the graph of $f(x) = \frac{1}{x}$.

The function $g(x)$ is shown below. Which statement correctly describes the graph of $g(x)$?

$$g(x) = \frac{1}{x} - 2$$

- A. The graph of $g(x)$ is the graph of $f(x)$ translated two units up.
- B. The graph of $g(x)$ is the graph of $f(x)$ translated two units right.
- C. The graph of $g(x)$ is the graph of $f(x)$ translated two units down.
- D. The graph of $g(x)$ is the graph of $f(x)$ translated two units left.

10.



Which of the following is equal to $g(x)$?

- A. $\bar{3} \cdot \bar{2}^{x}$
- B. $\bar{2}^{(3x)}$
- C. $\frac{1}{3} \cdot 2^{x}$
- D. $\bar{2}^{\left(\frac{1}{3}x\right)}$

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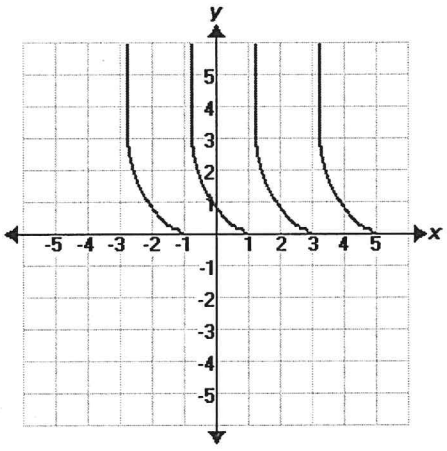
11. What type of function is graphed below?



- A. not a function

- B. even function
- C. odd function
- D. neither even nor odd

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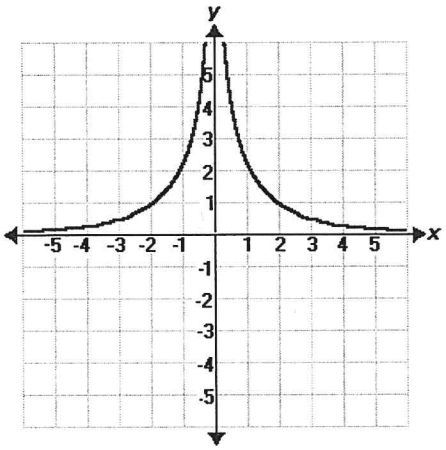
12. What type of function is graphed below?



- A. not a function
- B. odd function
- C. neither even nor odd
- D. even function

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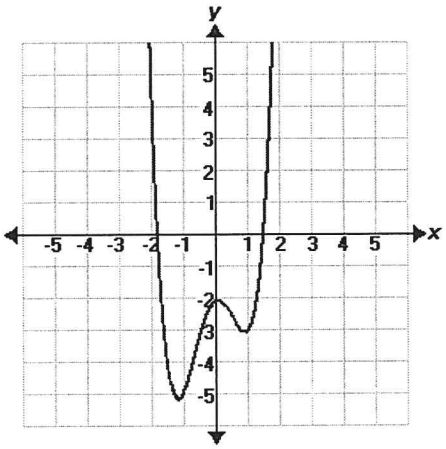
13. What type of function is graphed below?



- A. not a function
- B. even function
- C. odd function
- D. neither even nor odd

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14. Each statement below describes a transformation of the graph of $f(x) = \frac{1}{x}$.

The function $g(x)$ is shown below. Which statement correctly describes the graph of $g(x)$?

$$g(x) = \frac{1}{x+7} + 1$$

- A. The graph of $g(x)$ is the graph of $f(x)$ translated one unit down and seven units left.
- B. The graph of $g(x)$ is the graph of $f(x)$ translated one unit down and seven units right.
- C. The graph of $g(x)$ is the graph of $f(x)$ translated one unit up and seven units left.
- D. The graph of $g(x)$ is the graph of $f(x)$ translated one unit up and seven units right.

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15. Determine whether the function below is an even function, an odd function, both, or neither.

$$f(x) = \frac{|x|}{x^3 + 3x}$$

- A. even function
- B. both even and odd
- C. neither even nor odd
- D. odd function

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16. Consider the function $f(x) = \sqrt{x}$ and the function $g(x)$ shown below.

How will the graph of $g(x)$ differ from the graph of $f(x)$?

$$g(x) = f\left(\tfrac{1}{2} \cdot x\right) = \sqrt{\left(\tfrac{1}{2} \cdot x\right)}$$

- A. The graph of $g(x)$ is the graph of $f(x)$ stretched horizontally by a factor of 2.
- B. The graph of $g(x)$ is the graph of $f(x)$ compressed horizontally by a factor of $\frac{1}{2}$.
- C. The graph of $g(x)$ is the graph of $f(x)$ shifted up $\frac{1}{2}$ of a unit.
- D. The graph of $g(x)$ is the graph of $f(x)$ shifted $\frac{1}{2}$ of a unit to the right.

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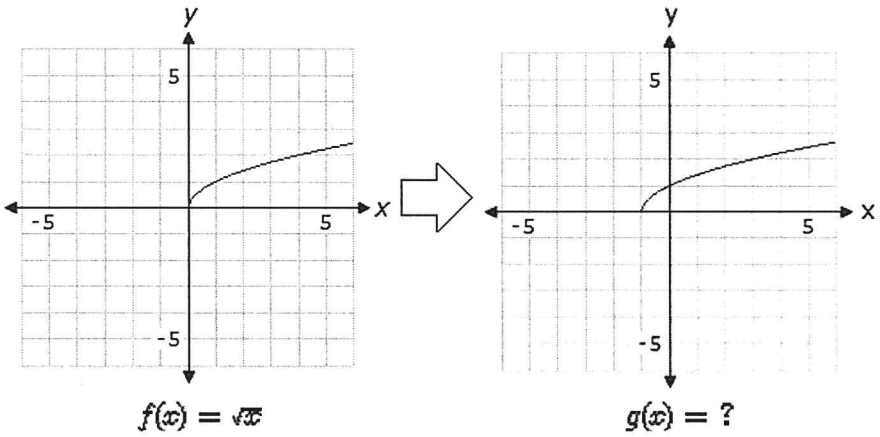
17. Each statement below describes a transformation of the graph of $f(x) = \sqrt{x}$.

Which statement correctly describes the graph of $g(x) = \sqrt{x-9} - 3$?

- A. The graph of $g(x)$ is the graph of $f(x)$ translated three units up and nine units right.
- B. The graph of $g(x)$ is the graph of $f(x)$ translated three units down and nine units right
- C. The graph of $g(x)$ is the graph of $f(x)$ translated three units up and nine units left.
- D. The graph of $g(x)$ is the graph of $f(x)$ translated three units down and nine units left.

18.

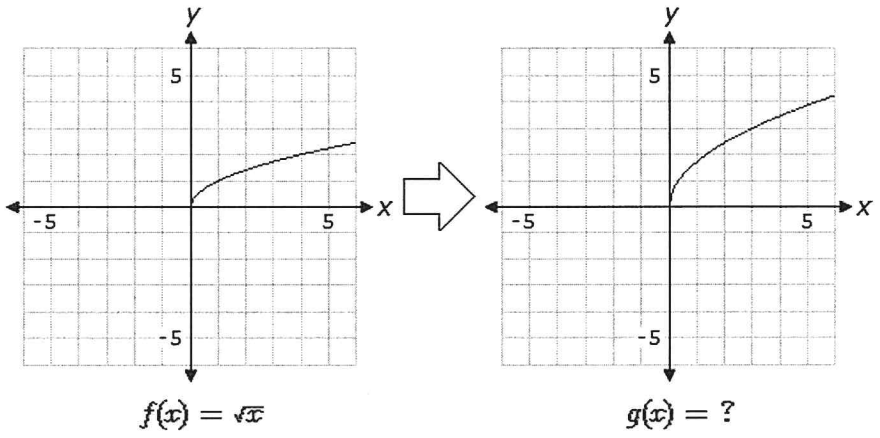


$f(x) = \sqrt{x}$ $g(x) = ?$

Which of the following is equal to $g(x)$?

- A. $\sqrt{x-1}$
- B. $\sqrt{x}+1$
- C. $\sqrt{x}-1$
- D. $\sqrt{x+1}$

19.

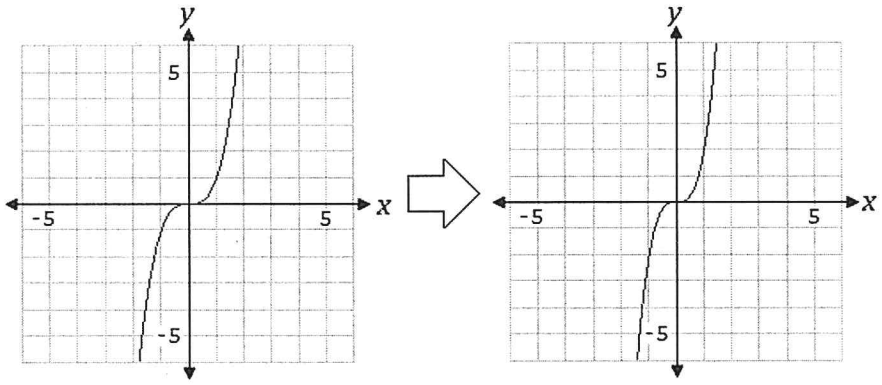


$f(x) = \sqrt{x}$ $g(x) = ?$

Which of the following is equal to $g(x)$?

- A. $\sqrt{3x}$
- B. $\sqrt{x+3}$
- C. $\sqrt{x}+3$
- D. $3\sqrt{x}$

20.



$f(x) = x^3$ $g(x) = ?$

Which of the following is equal to $g(x)$?

- A. $2x^3$
- B. $(2x)^3$
- C. $\left(\frac{1}{2}x\right)^3$
- D. $\frac{1}{2}x^3$

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21. Consider the function $f(x) = \frac{1}{x}$ and the function $g(x)$ shown below.

How will the graph of $g(x)$ differ from the graph of $f(x)$?

$$g(x) = f(4 \cdot x) = \frac{1}{4x}$$

- A. The graph of $g(x)$ is the graph of $f(x)$ compressed horizontally by a factor of $\frac{1}{4}$.
- B. The graph of $g(x)$ is the graph of $f(x)$ shifted to the right 4 units.
- C. The graph of $g(x)$ is the graph of $f(x)$ shifted up 4 units.
- D. The graph of $g(x)$ is the graph of $f(x)$ stretched horizontally by a factor of 4.

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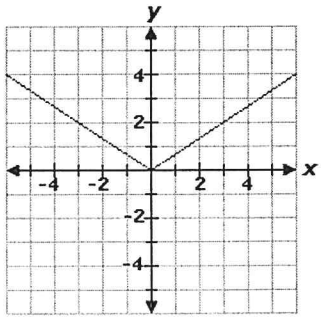
22. What type of function is graphed below?



- A. not a function
- B. even function
- C. neither even nor odd
- D. odd function

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23. Determine whether the function below is an even function, an odd function, both, or neither.

$$f(x) = \frac{x^2 - 36}{x^3 + x}$$

- A. neither even nor odd
- B. even function
- C. both even and odd
- D. odd function

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24. Consider the function $f(x) = \sqrt{x}$ and the function $g(x)$ shown below.

How will the graph of $g(x)$ differ from the graph of $f(x)$?

$$g(x) = 4f(x) = 4\sqrt{x}$$

- A. The graph of $g(x)$ is the graph of $f(x)$ shifted up 4 units.
- B. The graph of $g(x)$ is the graph of $f(x)$ compressed vertically by a factor of $\frac{1}{4}$.
- C. The graph of $g(x)$ is the graph of $f(x)$ shifted to the right 4 units.
- D. The graph of $g(x)$ is the graph of $f(x)$ stretched vertically by a factor of 4.

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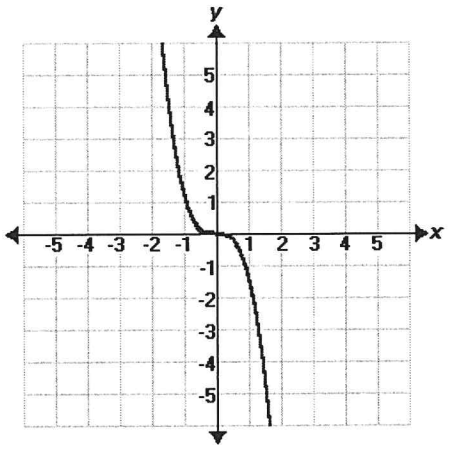
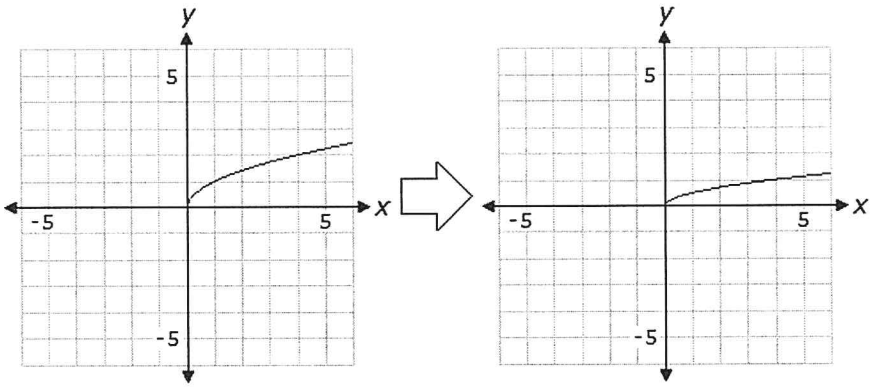
25. What type of function is graphed below?



- A. even function
- B. neither even nor odd
- C. odd function
- D. not a function

26.



Which of the following is equal to $g(x)$?

- A. $\sqrt{\frac{1}{2}x}$
- B. $\frac{1}{2}\sqrt{x}$
- C. $4\sqrt{x}$
- D. $\sqrt{4x}$

Answers

1. A
2. A
3. B
4. B
5. C
6. D
7. C
8. B
9. C
10. C
11. D
12. D
13. D
14. C
15. D
16. A
17. B
18. D
19. A
20. A
21. A
22. B
23. D
24. D

25. C
26. B