

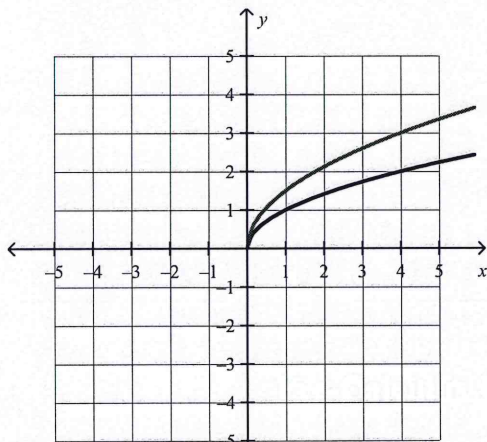
### Pre-Calculus 12 Chapter 2 Review

#### Multiple Choice

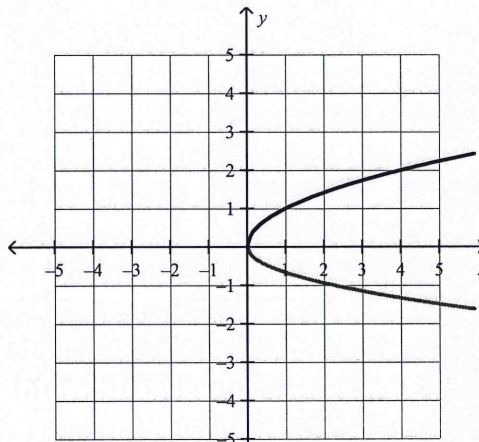
Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. Which of the graphs shown below represents the base function  $f(x) = \sqrt{x}$  and the stretched function  $g(x) = -\frac{3}{2}\sqrt{x}$ ?

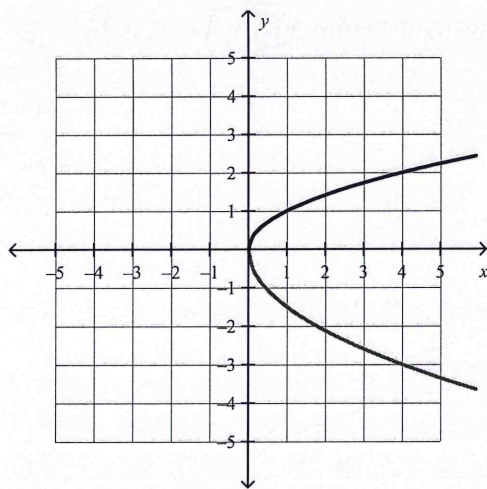
**A**



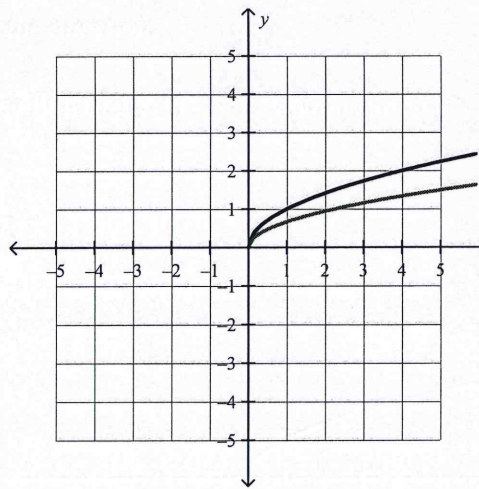
**C**



**B**

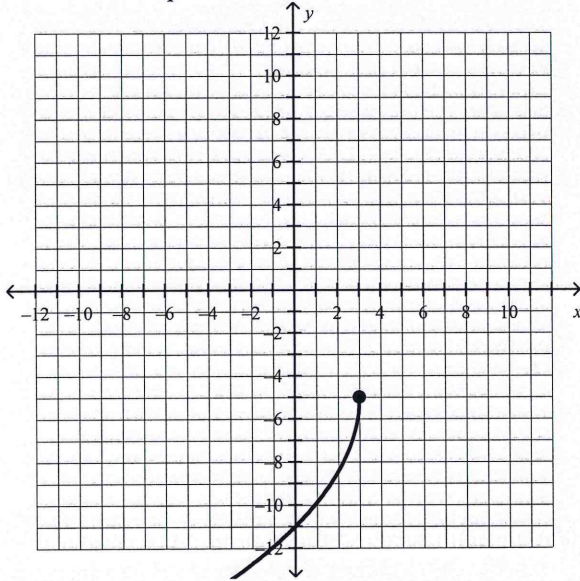


**D**



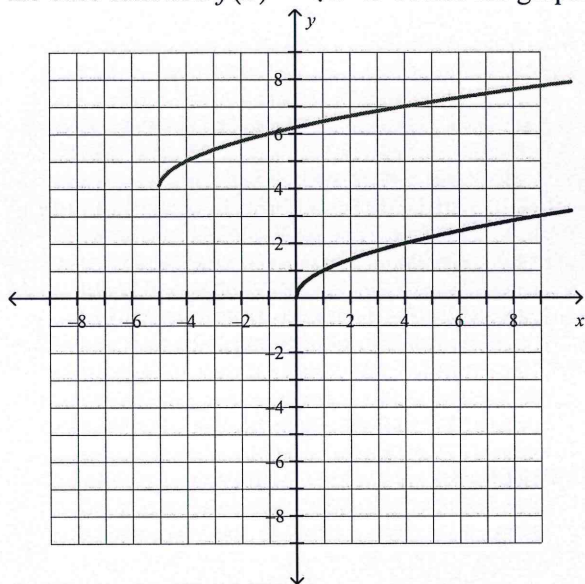
- \_\_\_\_\_ 2. Given the function  $f(x) = \sqrt{x-h} + k$  with a domain of  $\{x|x \geq -5, x \in R\}$  and a range of  $\{y|y \geq 8, y \in R\}$ , which of the following best describes the vertical and horizontal translations with respect to the graph of  $f(x) = \sqrt{x}$ ?
- A** 5 units to the left and 8 units up      **C** 8 units to the left and 5 units up  
**B** 8 units to the left and 5 units down      **D** 5 units to the left and 8 units down

3. Compared to the graph of the base function  $f(x) = \sqrt{x}$ , the graph of the function  $g(x) = \sqrt{x+8} - 4$  is translated
- A 4 units to the right and 8 units up      C 8 units to the left and 4 units down  
B 4 units to the left and 8 units down      D 8 units to the right and 4 units up
4. What is the equation of the radical function shown in the graph below?



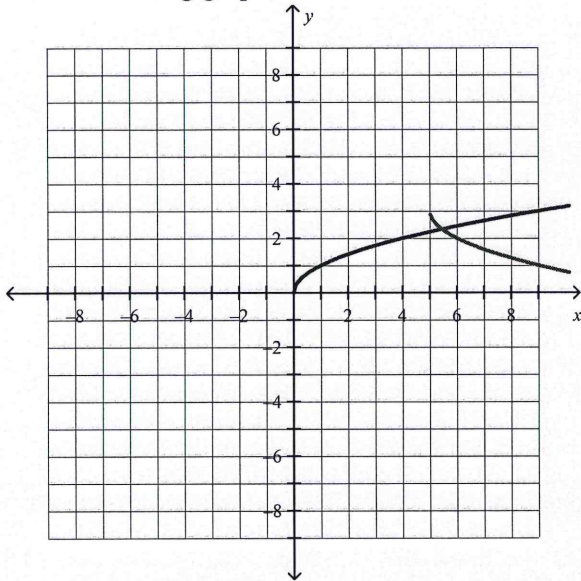
- A  $f(x) = -2\sqrt{\frac{1}{-3}(x-5)} - 3$       C  $f(x) = -2\sqrt{-3(x-3)} - 5$   
B  $f(x) = -2\sqrt{-3(x+3)} - 5$       D  $f(x) = -2\sqrt{\frac{1}{-3}(x-3)} - 5$

5. What is the equation of the transformed function,  $g(x)$ , after the transformations are applied to the graph of the base function  $f(x) = \sqrt{x}$  to obtain the graph of  $g(x)$ ?



- A  $g(x) + 4 = \sqrt{x+4}$                       C  $g(x) + 5 = \sqrt{x+4}$   
B  $g(x) = \sqrt{x+4} + 5$                       D  $g(x) = \sqrt{x+5} + 4$

6. In the following graph, what transformations must be applied to  $f(x) = \sqrt{x}$  to obtain  $g(x)$ ?



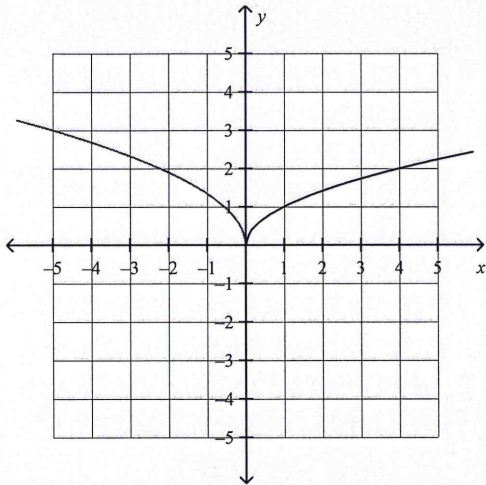
- A a reflection in the  $x$ -axis, a vertical translation 5 units up, and a horizontal translation 3 units to the right
- B a reflection in the  $x$ -axis, a vertical translation 5 units down, and a horizontal translation 3 units to the right
- C a reflection in the  $x$ -axis, a vertical translation 3 units up, and a horizontal translation 5 units to the left
- D a reflection in the  $x$ -axis, a vertical translation 3 units up, and a horizontal translation 5 units to the right

7. Which point on the graph  $y = f(x)$  does not exist on the graph of  $y = \sqrt{f(x)}$ ?

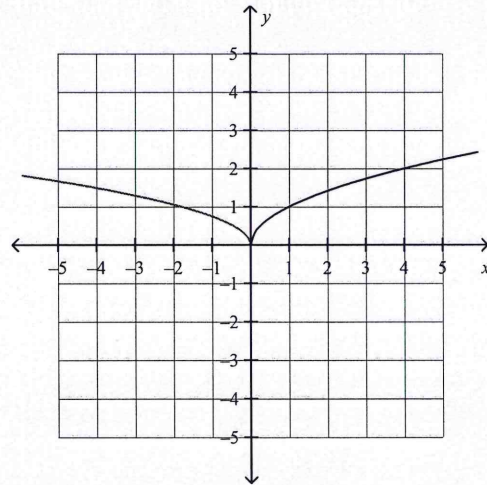
- |          |             |
|----------|-------------|
| A (3,4)  | C (-8,-3)   |
| B (-4,4) | D (0.6,2.7) |

8. Which of the graphs shown below represents the base function  $f(x) = \sqrt{x}$  and the stretched function  $g(x) = \sqrt{-9/5x}$ ?

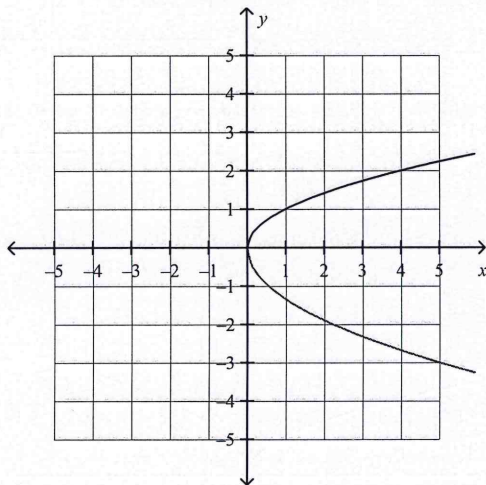
A



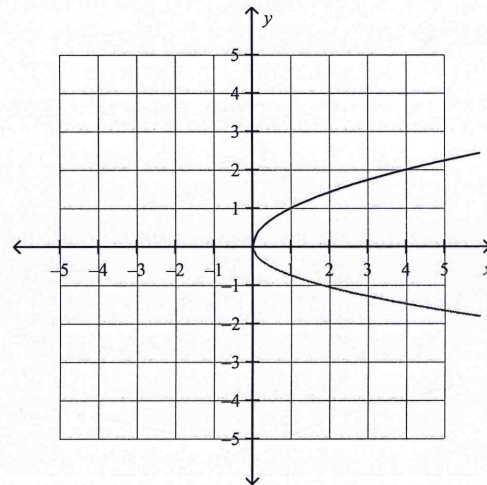
C



B



D



9. What are the coordinates of the invariant point(s) when the function  $y = \sqrt{x} - 3$  is reflected in the  $y$ -axis?

A (9, -3)

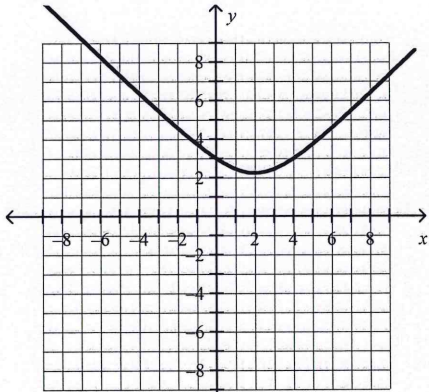
C (0, -3)

B (-3, 0) and (9, 0)

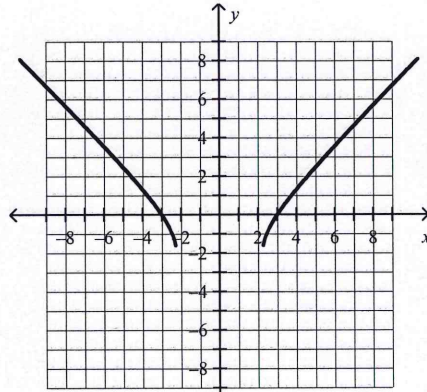
D (0, 9)

10. Which is the graph of the square root of the function  $f(x) = (x - 5)^2 - 2$ ?

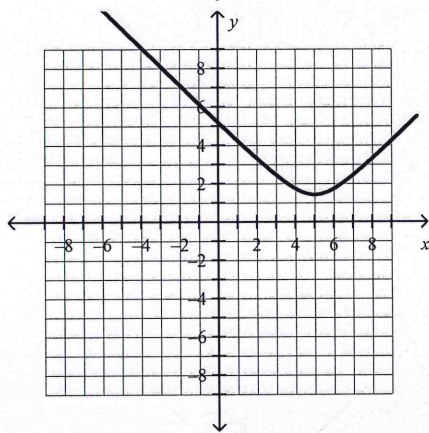
A



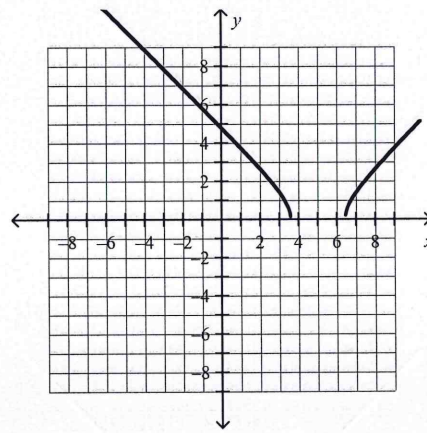
C



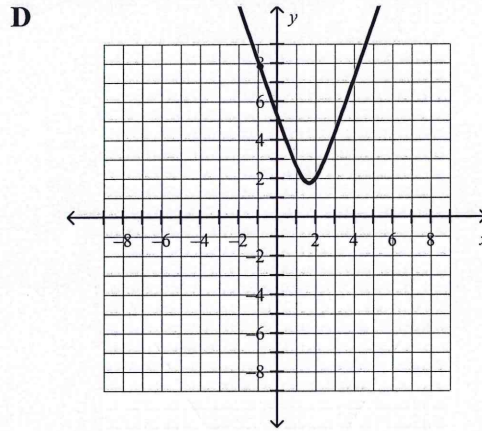
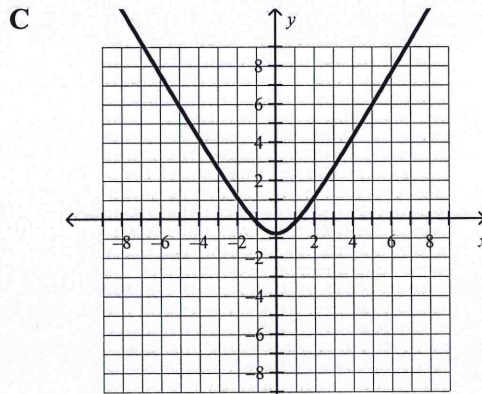
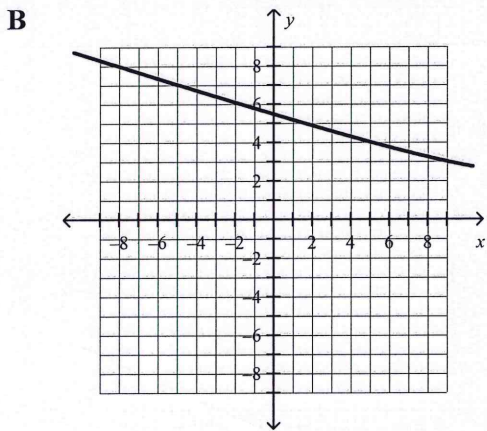
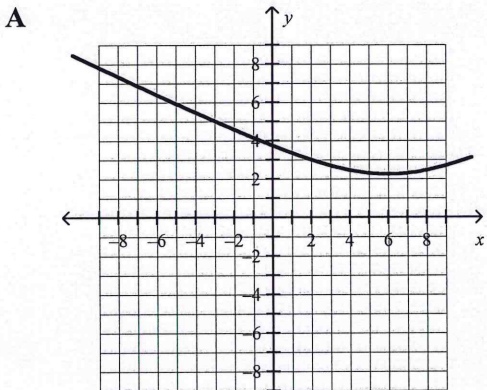
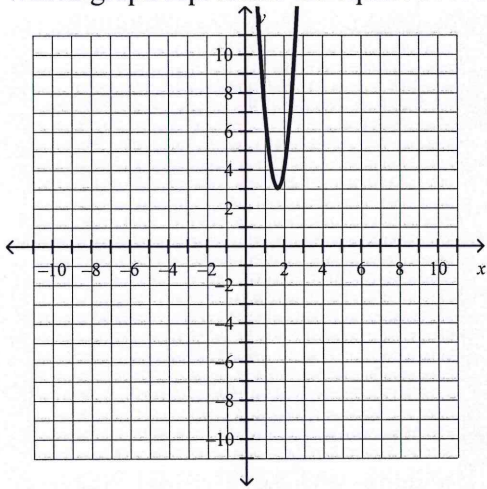
B



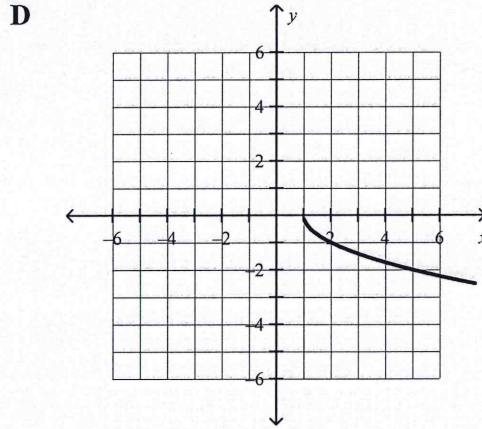
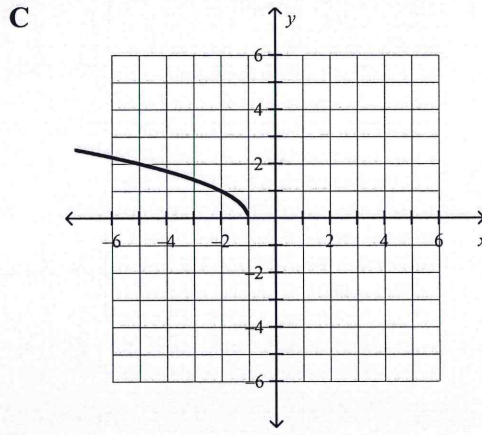
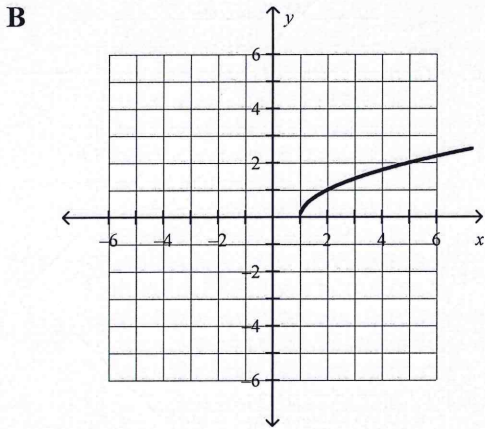
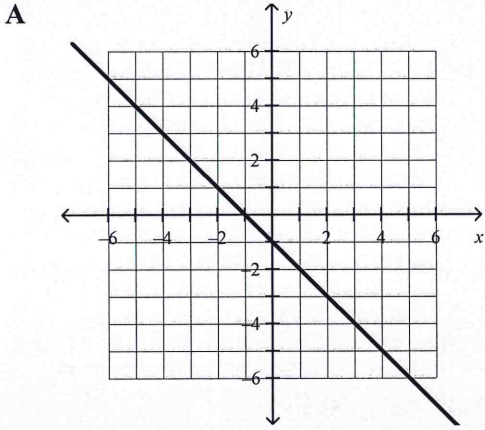
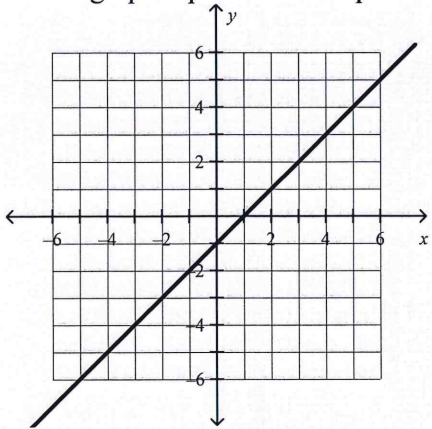
D



11. Which graph represents the square root of the function shown in the graph?

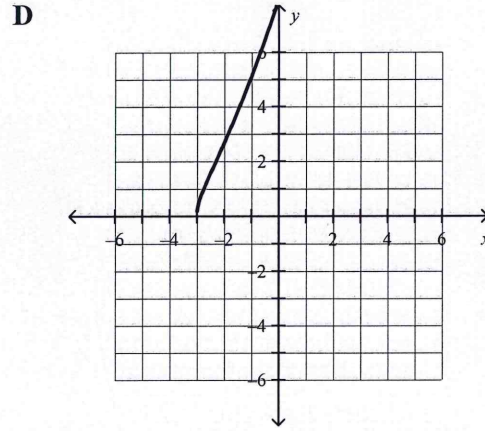
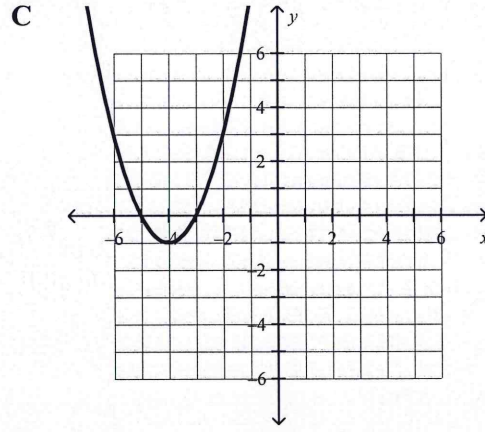
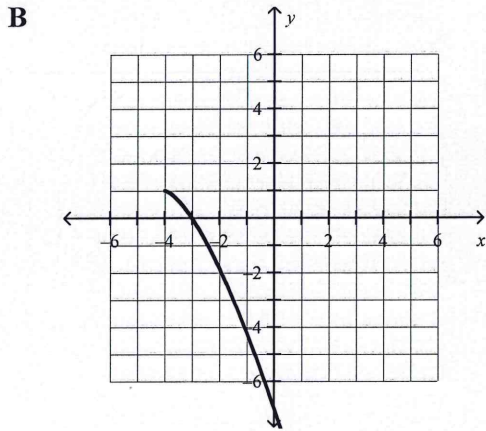
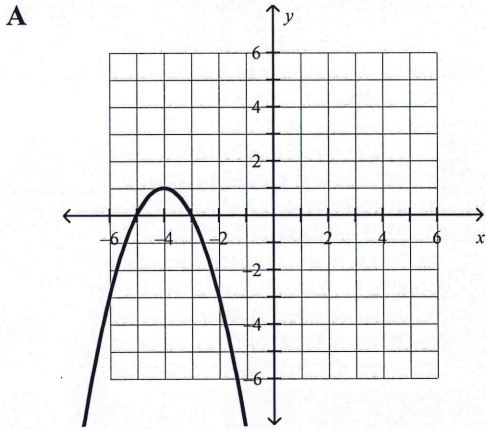
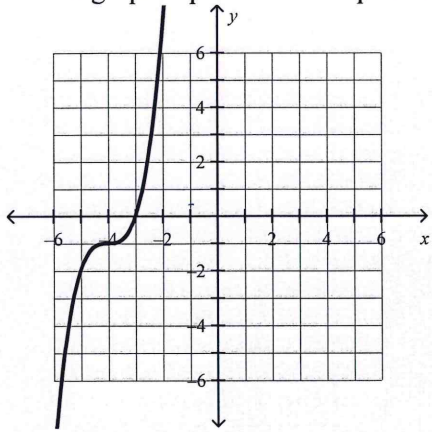


12. Which graph represents the square root of the graph shown?



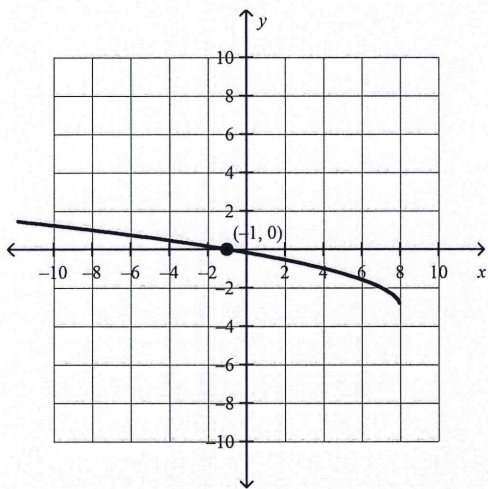


13. Which graph represents the square root of the graph shown?

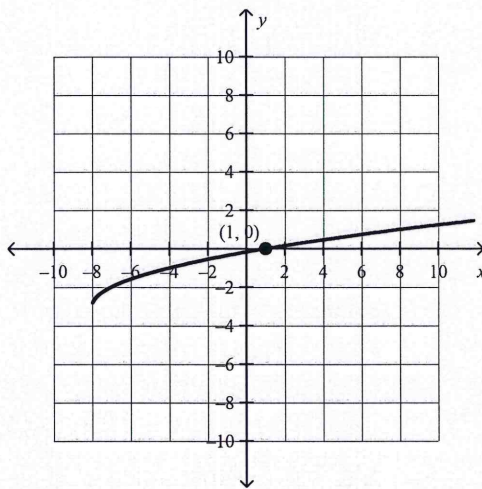


14. Which graph shows the graphical solution to the radical equation  $0 = \sqrt{x+8} - 3$ ?

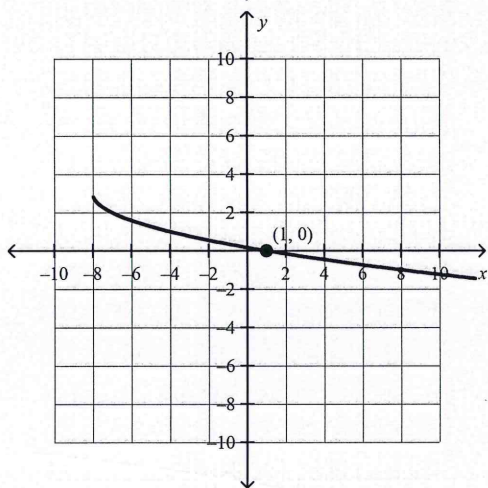
A



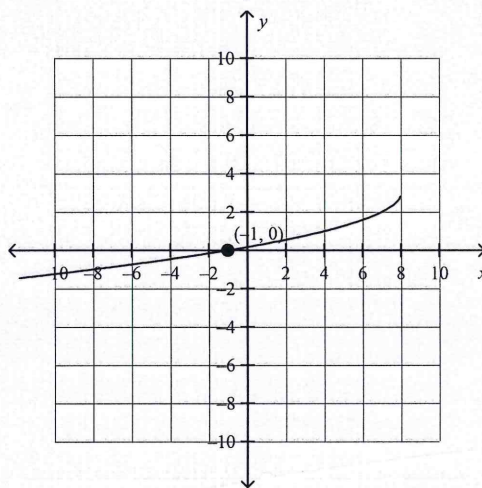
C



B

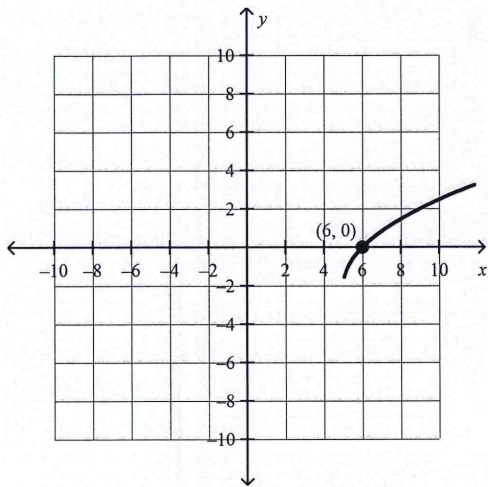


D

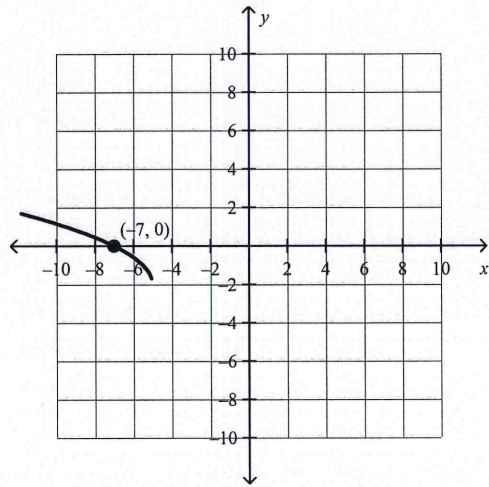


15. Which graph shows the graphical solution to the radical equation  $0 = 2\sqrt{x-5} - 2$ ?

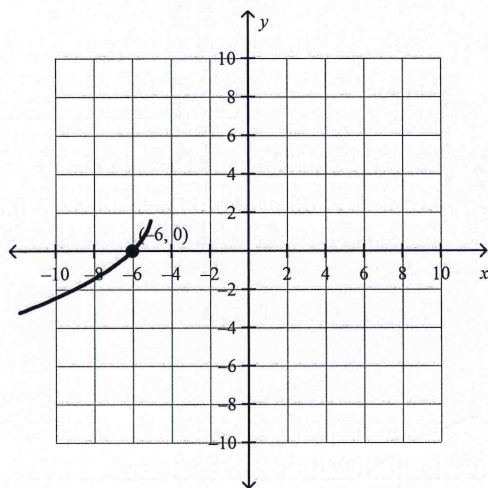
A



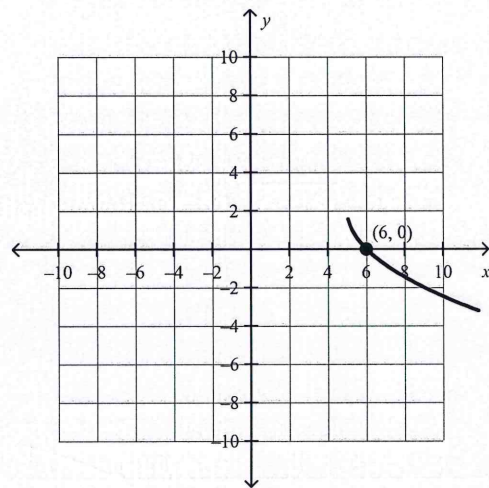
C



B

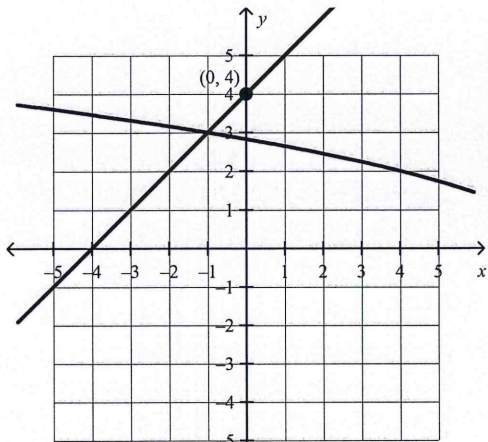


D

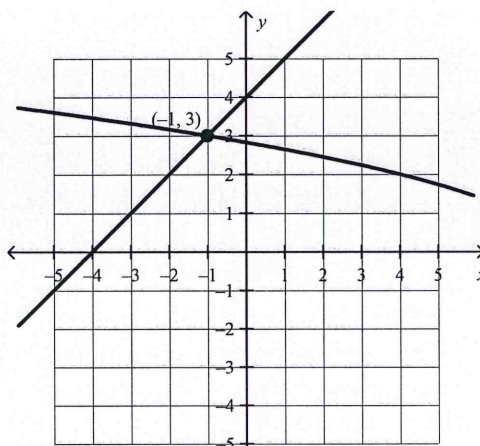


16. Which graph shows the solution to the radical equation  $\sqrt{8-x} = x+4$ ?

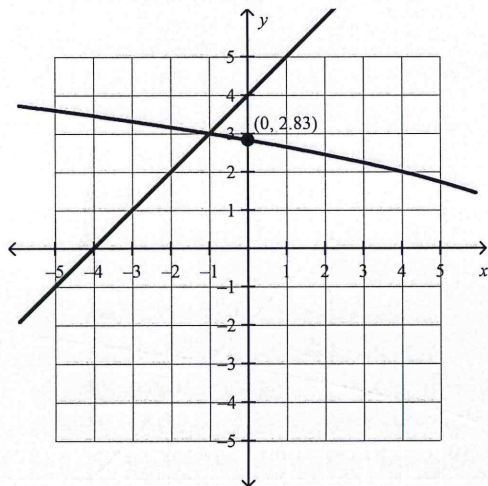
A



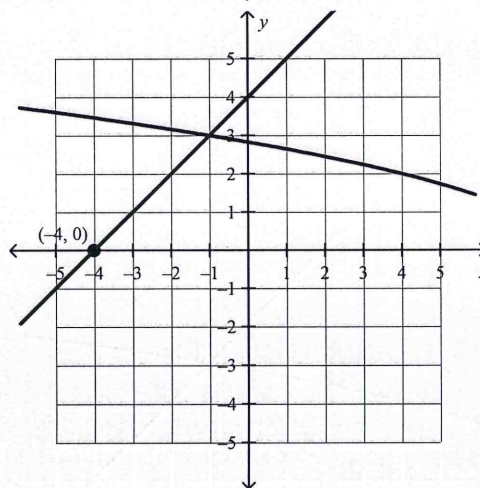
C



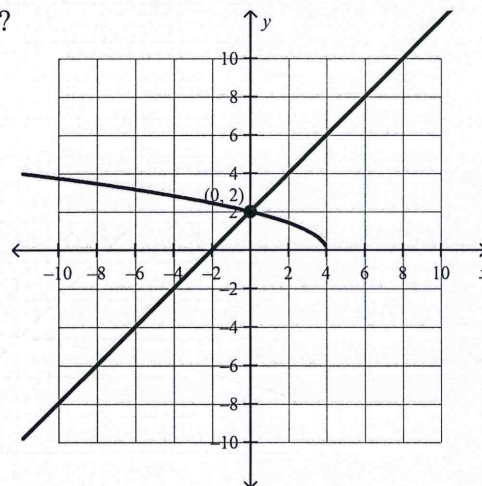
B



D



17. Which radical equation can be solved using the graph shown below?



A  $-\sqrt{4-x} = x+2$

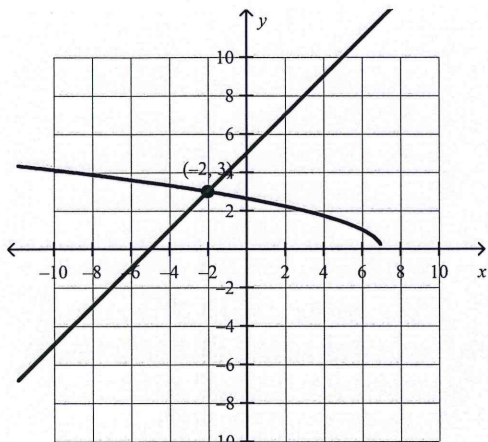
B  $\sqrt{4-x} = x+2$

C  $x+2 = -\sqrt{4+x}$

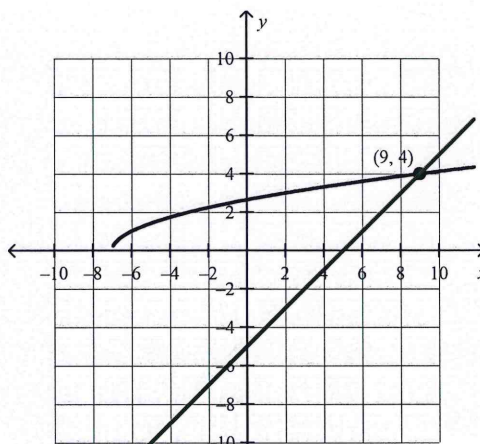
D  $\sqrt{4+x} = x+2$

18. Which graph shows the solution to the radical equation  $-\sqrt{7-x} = -x - 5$ ?

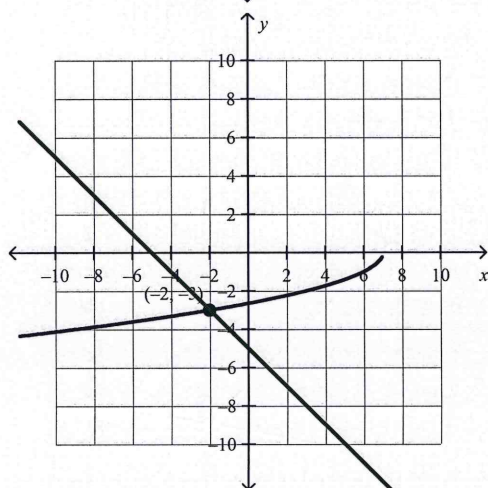
A



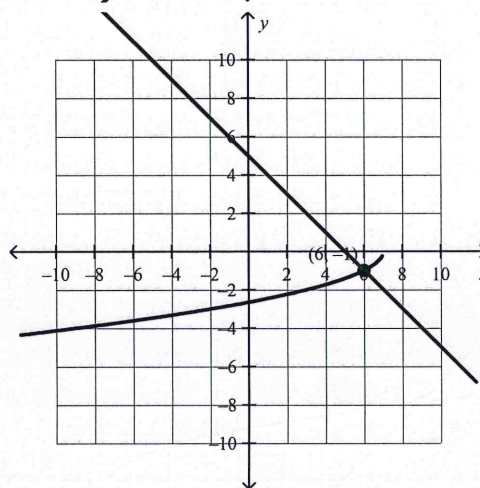
C



B



D



19. When solving the equation  $\sqrt{x+8} = x+6$ , which values must be checked for extraneous roots?

A -4 and 7

C 8 and 6

B 7 and -7

D -4 and -7

20. Which equation of a radical function would have the following domain and range?

$\{x|x \geq -6, x \in R\}; \{y|y \geq 10, x \in R\}$

A  $y = \sqrt{x-10} + 6$

C  $y = \sqrt{x+6} - 10$

B  $y = \sqrt{x+6} + 10$

D  $y = \sqrt{x+10} + 6$

**Short Answer**

1. What is the solution to the radical equation  $0 = 2\sqrt{2(x+4)} - 8$ ?

2. Solve the equation  $8 + \sqrt{x+5} = 1$  algebraically.

Name: \_\_\_\_\_

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3. Solve the equation  $\sqrt{x+5} = x+3$  algebraically.

4. Solve the equation  $\sqrt{3x^2-5} = x+4$  algebraically to the nearest hundredth.

5. Solve the equation  $\sqrt{3x^2-11} = x+1$  algebraically.