

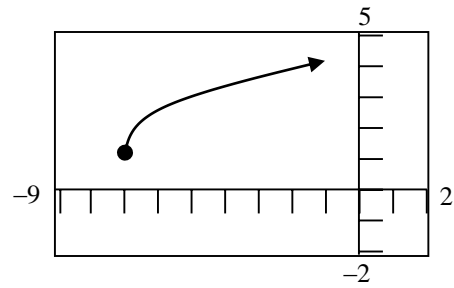
9. Identify the type of symmetry for each function:

a) $y = x^2 + 5$

b) $2x^2 + xy - 4 = 0$

c) $x^5 - 2x^3 - y = 0$

10. The graph at the right is a transformation of the graph of $f(x) = \sqrt{x}$. Find an equation for the function.



11. Given $f(x) = 2x^2 - 5$ and $g(x) = 3 - x$, find $(f \circ g)(x)$.

12. Algebraically, determine if the functions are inverses of each other.

$$f(x) = \frac{2x+5}{3} \quad g(x) = \frac{3x-5}{2}$$

13. a) Given $f(x) = \frac{1}{2}x^2 + 3$, find $f^{-1}(x)$. b) Given $g(x) = (x-4)^3$, find the inverse of the function.

14. If $f(x) = x^2 + 6x + 9$, then find $\frac{f(x+c) - f(c)}{c}, x \neq 0$.

15. For the function $f(x) = x^2 + x - 6$, determine:

(a) whether $f(x)$ is even, odd, or neither

(b) the intervals for which $f(x) \geq 0$.

16. Determine the domain of the function: $f(x) = \frac{8}{x^2 - 9}$

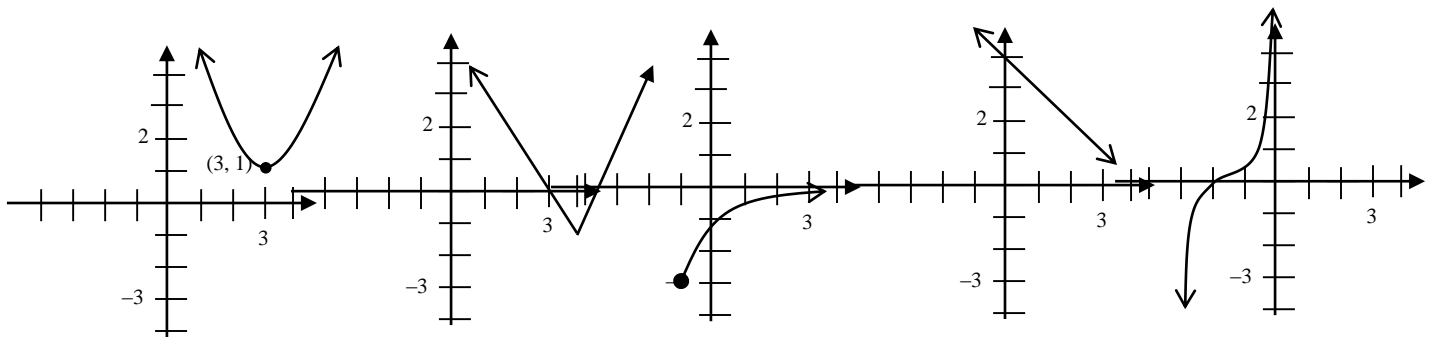
17. Graph: $f(x) = \begin{cases} (x-3)^2, & x \leq 4 \\ -x, & x > 4 \end{cases}$

18. Given $f(x) = x^2$ and $g(x) = 2x - 7$, find the following: $f + g$, fg , and $(f - g)(5)$.

Precalculus Chapter 1 Test Review Solutions

1. Graph each equation:

a) $y = (x-3)^2 + 1$ b) $y = |x-4| - 1$ c) $y = \sqrt{x+1} - 3$ d) $y = -x + 4$ e) $y = (x+2)^3$



2. -1

3. a) $y = \frac{1}{3}x - 4$ b) $y = \frac{3}{5}x - 8$

4. \$584,000

5. a, b, and c

6. $x^2 + 8x$

7. $[-2, \infty)$

8. Increasing: $(-2, 0)$; Decreasing: $(-\infty, -2), (0, \infty)$

9. a) y-axis b) origin c) origin

10. $f(x) = \sqrt{x+7} + 1$

11. $2x^2 - 12x + 13$

12. $f(g(x)) = x$, so yes.

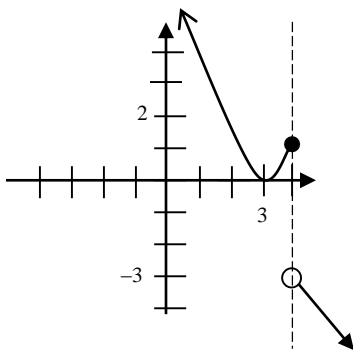
13. a) $y = \pm\sqrt{2x-6}$ b) $y = \sqrt[3]{x} + 4$

14. $2x + c + 6$

15. a) neither b) $x \leq -3$ and $x \geq 2$

16. ARN: $x \neq \pm 3$

17.



18. $f + g = x^2 + 2x - 7$; $fg = 2x^3 - 7x^2$; $(f - g)(5) = 22$