

Name: Selected Answers

Date: _____

Homework: Symmetry

Honors PreCalculus

Test the following equations for symmetry.

1. $y = x^4 + 2x^2$

y-axis, even function

2. $x^2y^2 + xy = 1$

origin symmetry, odd function

3. $y = x^3 + 10x$

origin symmetry, odd function

4. $y = x^2 + |x|$

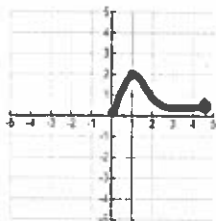
y-axis symmetry, even function

5. $x^4 + x^3 - x = 2y$

no symmetry, neither even nor odd

Complete the given graph using the given symmetry.

6. Symmetric with respect to origin



7. Symmetric with respect to x-axis



Identify if the following functions are even, odd, or neither.

11. $f(x) = x^4 + 3|x| - 5$

Even Function

12. $f(x) = 6x^5 + 4x^3 - 5x^2 + 6$

Neither

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

Odd Function

14. $f(x) = 3x^3 - 6x^5$

Odd Function

15. $h(x) = 5x^4 - 6x^2 + 7$

Even Function

16. $|y| = \frac{1}{x^2} - x^4$

Neither

Find the domain of the following functions. Write the domain interval notation.

17. $f(x) = \frac{3x-5}{x^2-16}$

D: $(-\infty, -4) \cup (-4, 4) \cup (4, \infty)$

18. $f(x) = \sqrt[3]{x^2 - 2x - 35}$

D: $(-\infty, \infty)$

19. $f(x) = \sqrt{2x^2 - 5x - 12}$

D: $(-\infty, -\frac{3}{2}) \cup [4, \infty)$

20. $f(x) = \frac{8x^2 - 14x - 9}{\sqrt{6x-9}}$

D: $(\frac{3}{2}, \infty)$