3-5

Practice

Continuity and End Behavior

Determine whether each function is continuous at the given x-value. Justify your answer using the continuity test.

1. $y = \frac{2}{3x^2}; x = -1$

2. $y = \frac{x^2 + x + 4}{2}; x = 1$

3. $y = x^3 - 2x + 2; x = 1$

4. $y = \frac{x - 2}{x + 4}; x = -4$

Describe the end behavior of each function.

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

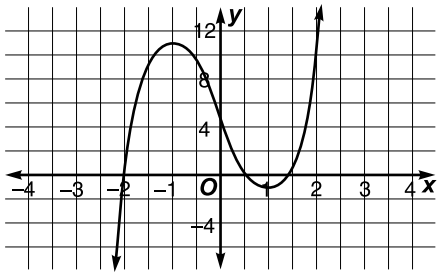
6. $y = -2x^6 + 4x^4 - 2x + 1$

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

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

Given the graph of the function, determine the interval(s) for which the function is increasing and the interval(s) for which the function is decreasing.

9.



10. ***Electronics*** Ohm's Law gives the relationship between resistance R, voltage E, and current I in a circuit as $R = \frac{E}{I}$. If the voltage remains constant but the current keeps increasing in the circuit, what happens to the resistance?