Precalculus Section 1.6 Exercises

In exercises 1-3, sketch the graph of the given function. State its domain, identify any intercepts, and test for symmetry.

1. $f(x) = \sqrt{3x - 2}$

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

3. $f(x) = \begin{cases} 2 - x & \text{if } x < 0 \\ 2 + x & \text{if } x \geq 0 \end{cases}$
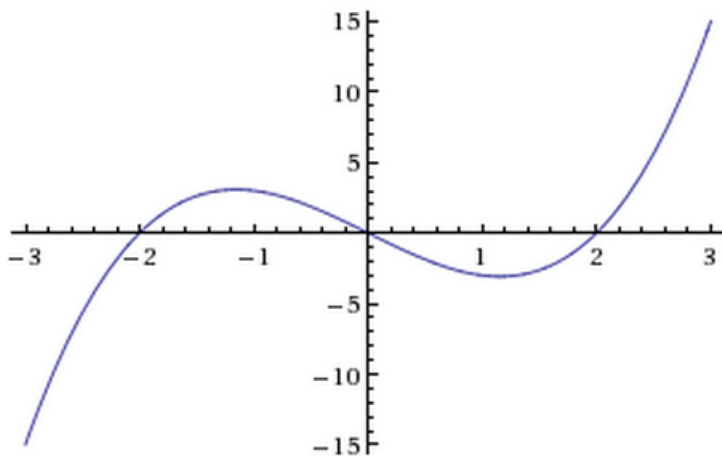
Determine analytically if the following functions are even, odd, or neither.

4. $f(x) = 2x^3 - 4x^2$

5. $f(x) = 2x^4 - 3x^2 - 1$

6. $f(x) = \begin{cases} 2 - x & \text{if } x < 0 \\ 2 + x & \text{if } x \geq 0 \end{cases}$

Use the graph of $f(x)$ below to answer questions 7-14.

7. Find the domain and range of f.
8. Determine $f(1)$.
9. Solve $f(x) = -5$.
10. List the x- and y-intercepts.
11. Find the zeros of f.
12. Solve $f(x) \leq 0$.
13. Find the number of solutions to $f(x) = 1$.
14. Does $f(x)$ appear to be even, odd, or neither?