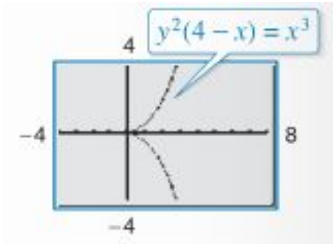
Chapter 1 Review

1. Find the equations of the lines that pass through the point $(0, 4)$ and are (a) parallel to and (b) perpendicular to the line $5x + 2y = 3$
2. Determine each relative minimum or relative maximum of the function $f(x) = x^5 - x^3 + 2$
3. Does the graph below represent a function? Explain.



4. Determine the intervals on which the function $f(x) = \frac{1}{4}x^4 - 2x^2$ is increasing, decreasing, or constant. Then, determine if the function is even, odd, or neither.
5. Use the functions $f(x) = x^2$ and $g(x) = \sqrt{2 - x}$ to evaluate the following:
   a. $(f - g)x$
   b. $f(g(x))$
   c. $g(f(x))$
6. Determine the domain and range of $f(x) = 10 - \sqrt{3 - x}$
7. Determine the inverse of $f(x) = 10 - \sqrt{3 - x}$. State the inverse using proper notation, then state the domain and range of the inverse.