In the following problems, use the graph of the function $f$ to find:

a) The domain and range of $f$.

b) The intervals on which $f$ is increasing, decreasing and constant.

c) The local minima and local maxima.

d) Whether the graph is symmetric with respect to the x-axis, the y-axis, or the origin.

e) Whether the function is even, odd, or neither.

f) The intercepts, if any.

5: Determine algebraically whether the given function is even, odd, or neither. You must show work to prove your answer.

a. $f(x) = x^3 - 4x$  
   [odd]

b. $f(x) = 1 + x + x^2$  
   [neither]

c. $f(x) = \frac{1}{x^4} + \frac{1}{x^2} + 1$  
   [even]