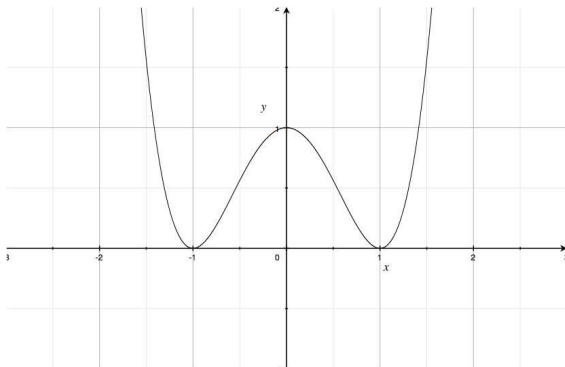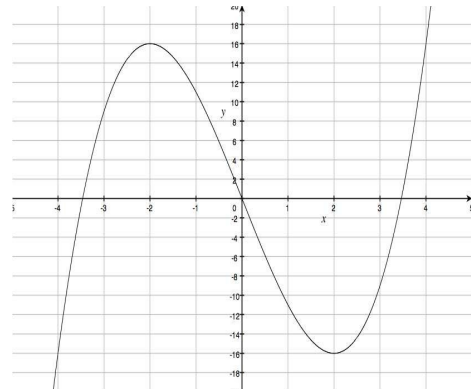3.3 Practice Problems

1. Determine whether each graph given is the graph of an even function, an odd function, or a function that is neither even nor odd.

a.

b.

c.

d.

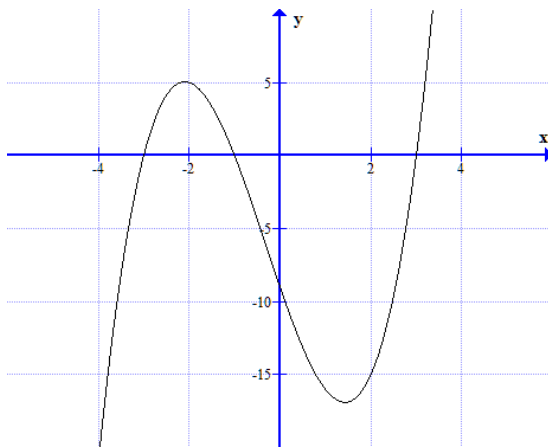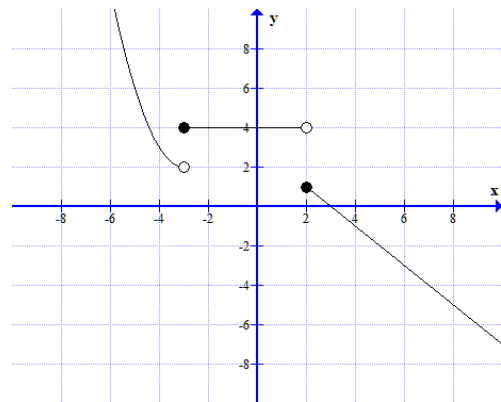2. For the graphs 1a, 1b, and 1d where is the graph increasing? Where is the graph decreasing? Where is the graph constant?

1a.   1b.   1d.

3. For the graphs 1a and 1b at what value(s) of x, if any, does f have a local maximum? List the local maximum values.

1a.   1b.

4. For the graphs 1a and 1b at what value(s) of x, if any, does f have a local minimum? List the local minimum values.

1a.   1b.

5. Determine whether each function is even, odd, or neither.
    a. $f(x)=x^3-x$ b. $h(x)=x^2+3$

    c. $g(x)=|x|+3$ d. $g(x)=x^2-x+2$

6. The equation of graph 1c is $y=x^3+x^2-9x-9$. Use your calculator to find the minimum and maximum values and where each occurs. Label the graph with your answers.

7. For the graph in 1c, where is the graph increasing? Where is the graph decreasing? Where is the graph constant?

Find the average rate of change of the function from x_1 to x_2.   Then find the equation of the secant line containing $(1,f(1))$ and $(2,f(2))$.
8. $f(x)=3x^2+2$ from $x_1=1$ to $x_2=2$

Find the average rate of change of the function from x_1 to x_2.   Then find the equation of the secant line containing $(2,f(2))$ and $(3,f(3))$.
9. $f(x)=3x^2+2$ from $x_1=2$ to $x_2=3$