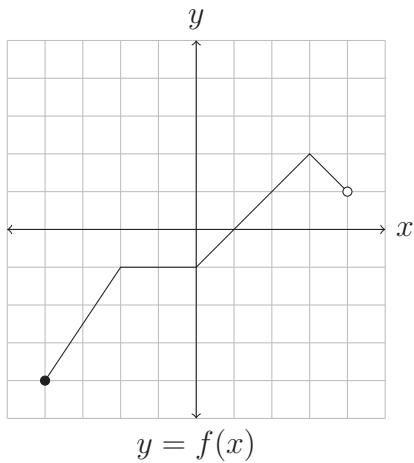


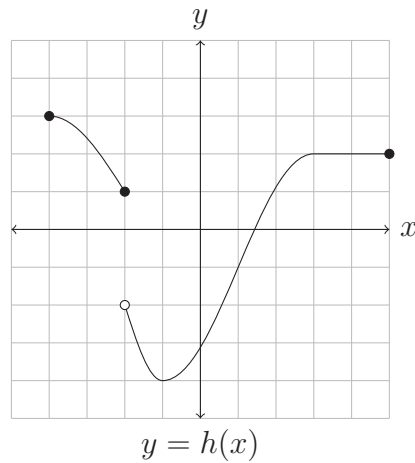
Name: \_\_\_\_\_

1. For each of the following graphs, determine where the function is increasing, decreasing, and constant. State any local and absolute maximums or minimums along with the location of the local/absolute maximums and minimums. Find any inflection points and state where the function is concave up and concave down.

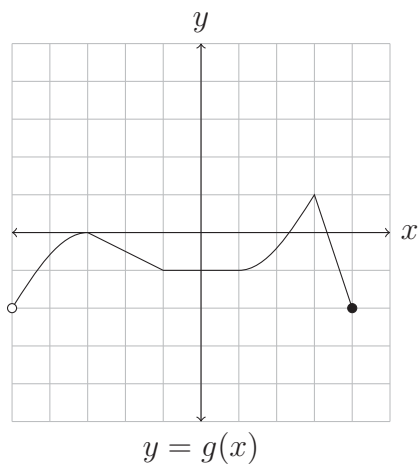
a.



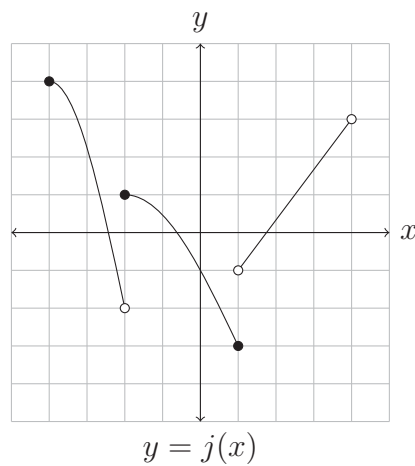
c.



b.



d.



2. Graph the following functions and determine the local and absolute minimums and maximums along with their locations and then state where the function is increasing, decreasing, or constant. Estimate the inflection points and then state where the function is concave up or concave down.

a.  $f(x) = \frac{1}{3}x^3 + x^2 - 15x + 3$

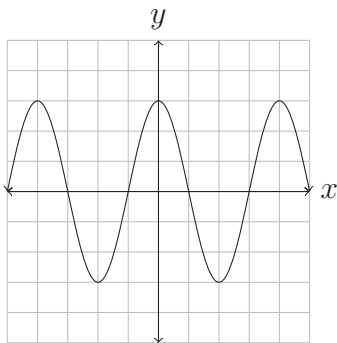
c.  $h(x) = 6x^2 - 3x - 3$

b.  $g(x) = \frac{1}{4}x^4 - \frac{2}{3}x^3 - \frac{5}{2}x^2 + 6x - 4$

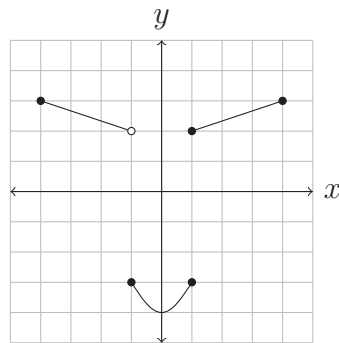
d.  $j(x) = 2x^5 - 3x^2 - 3$

3. Determine whether the following functions are even, odd, or neither by looking at their graphs.

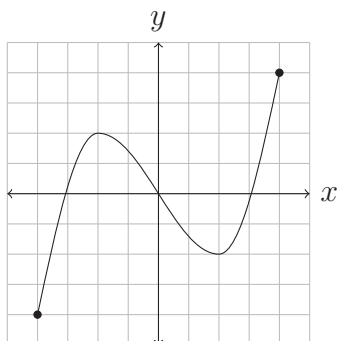
a.



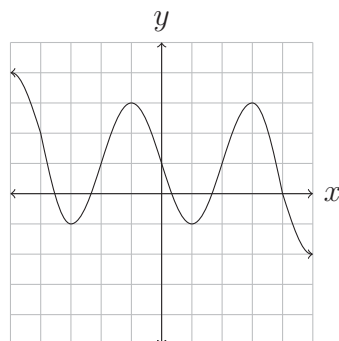
c.



b.



d.



4. Determine whether the following functions are even, odd, or neither by checking the definitions.

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

c.  $h(x) = 2x^4 + 7x^8$

b.  $g(x) = -5x^5 + 2x$

d.  $j(x) = 7x^3 - 10x^2 + x$

$$\text{e. } k(x) = \frac{-x^3 + x}{2x^2 - 5x^4}$$

$$\text{g. } m(x) = \frac{x^4 + x^2}{3x^2 + 5}$$

$$\text{f. } l(x) = \frac{2x^7 + 3x^3 + x}{x^5 - x^3}$$

$$\text{h. } n(x) = \frac{x^4 - x^3}{x^6 - 2x + 1}$$