Name: _____                                                    Date: _____

| **Learning Goal 1.1** | Understanding new ideas about functions and applying that to previously knowledge. |
|---|---|

1.  Determine whether the function is even, odd or neither.
    a.  $f(x) = x^2 + 4$
    b.  $g(x) = x^3 - 2x$
    c.  $h(x) = x^2 - 3x + 4$
    d.  $f(x) = x^3 - x^2 + 4x + 2$
    e.  $g(x) = -x^2 + 10$
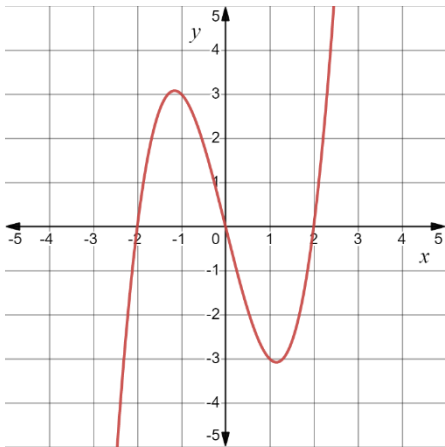    f.  $h(x) = x^3 + 4x$
    g.  $f(x) = -x^3 + 5x - 2$
    h.  $g(x) = \sqrt{x^4 - x^2} + 4$
    i.  $h(x) = |x + 4|$
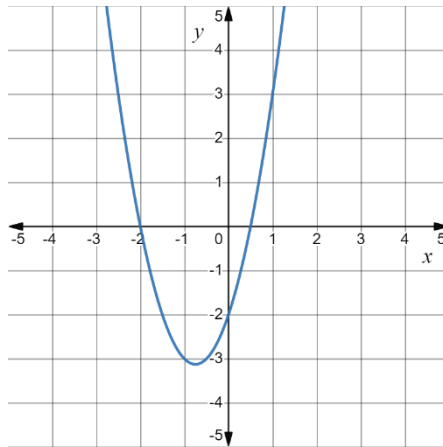
2.  Graphically determine whether the following functions are even, odd or neither.
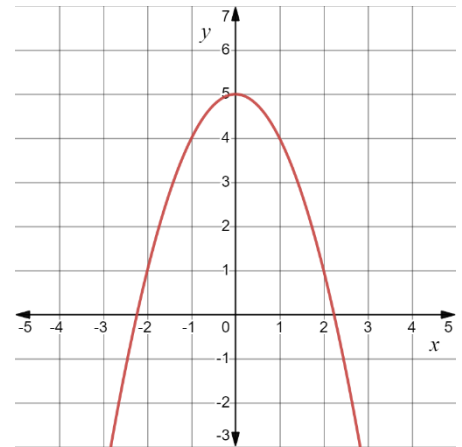    a.                                          b.                                          c.



3.  Evaluate the difference quotient for the following functions.  Simplify your answer.
    a.  $f(x) = -x^2 + 10$
    b.      $y = x^3 + 4x$