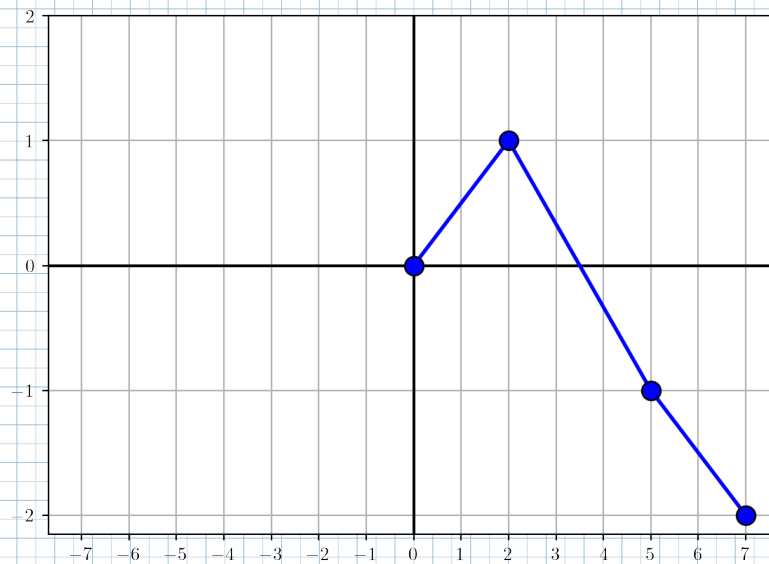1. Determine which of the following functions are even, odd or neither:

a) $f(x) = x^2 + \cos(x)$ b) $f(x) = x^2 + |x| + x$ c) $f(x) = x^4 \sin(x)$

2. Take f to be a function that is even. Part of its graph is shown below. Sketch what f looks like for values of x that are negative.

3. Take f to be the function that is given by

$$f(x) = |x - 3|.$$

Determine a vertical line L so that reflection of f across L is equal to f.

4. Take f to be a function that is given by

$$f(x) = |x - 3|.$$

Determine a vector $\langle a, 0 \rangle$ so that $\langle a, 0 \rangle + f$ is an even function.

5. Take f to be a function that is given by

$$f(x) = (x+2)|x+2| - 1.$$

Determine a point p so that rotation around p by half a circle equals f.

6. Take f to be a function that is given by

$$f(x) = (x+2)|x+2| - 1.$$

Determine a vector V so that $V + f$ is an odd function.