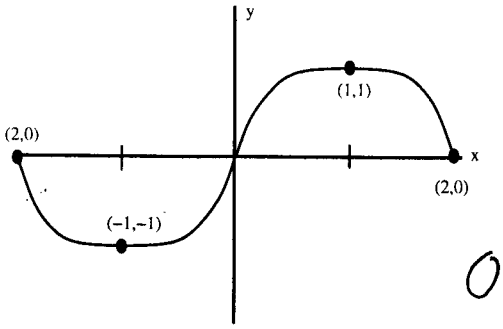
Problem 6 (15 points). *Are the following following functions even, odd or neither? Be sure to show work. If the function is presented as a graph, give a reason.*

(5 points) a)



ODD by 180 symmetry of graph

(5 points) b) $Q(x) = \frac{|x|}{x^3+5x^2}$

$$Q(-x) = \frac{|-x|}{(-x)^3 + 5(-x)^2} = \frac{|x|}{-x^3+5x^2} \neq Q(x) \text{ not even}$$

$$\neq -Q(x) \text{ not odd}$$

$Q(x)$ is neither even nor odd.

(5 points) c) $f(x) = \frac{|x|}{x^3}$

$$f(-x) = \frac{|-x|}{(-x)^3} = \frac{|x|}{-x^3} = -\frac{|x|}{x^3} = -f(x)$$ so $f(x)$ is odd.