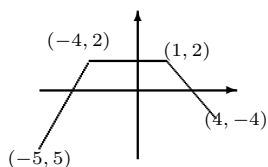


HAP 3.3 Properties of Functions

- How to determine even and odd functions from a graph and from the equation:
- Use a graph to determine where a function is increasing, decreasing, or constant
- Use a graph to locate local maxima and local minima
- Find the average rate of change of a function



1. (a) State the intervals where the function is increasing, decreasing, or constant
- (b) State the domain and range.
- (c) State whether the graph is odd, even or neither.
- (d) Locate the maxima and minima
- (e) What is the average rate of change from $x = -5$ to $x = 1$?

2. Let $f(x) = x^3 - 2x + 1$

(a) Determine algebraically whether the function f is odd, even or neither

(b) Find the average rate of change of f from $x = 0$ to $x = 1$. *Hint:* Find $f(0)$ and $f(1)$

3. Let $g(x) = -x^3 + 3x^2$ from $x = -1$ to $x = 4$

(a) Determine algebraically whether the function g is odd, even or neither

(b) Find the average rate of change of g from $x = -1$ to $x = 4$.