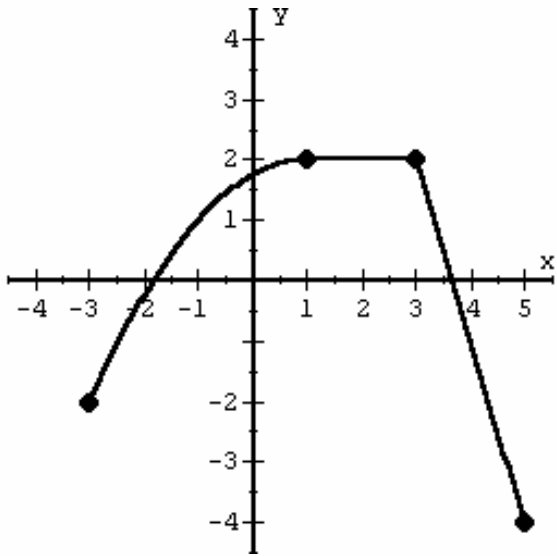


Increasing / Decreasing / Constant Functions



Function? Yes

Domain: $x \in [-3, 5]$

Range: $y \in [-4, 2]$

f is increasing on $(-3, 1)$

f is constant on $(1, 3)$

f is decreasing on $(3, 5)$

Definition

Let f be a function defined on an **open** interval I .

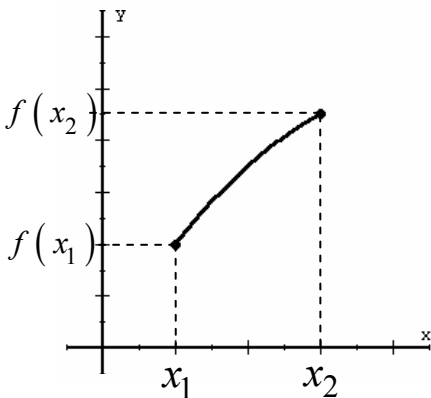
Let x_1 and x_2 be any values in I such that $x_1 < x_2$.

Then

$f(x_1) < f(x_2) \Rightarrow f$ is increasing

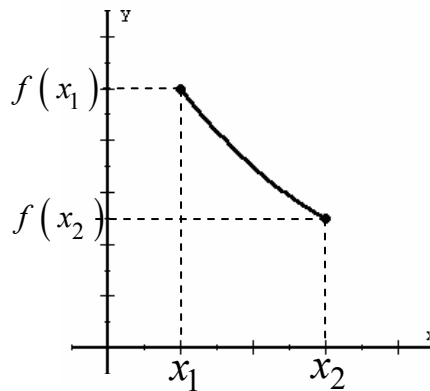
$f(x_1) > f(x_2) \Rightarrow f$ is decreasing

$f(x_1) = f(x_2) \Rightarrow f$ is constant



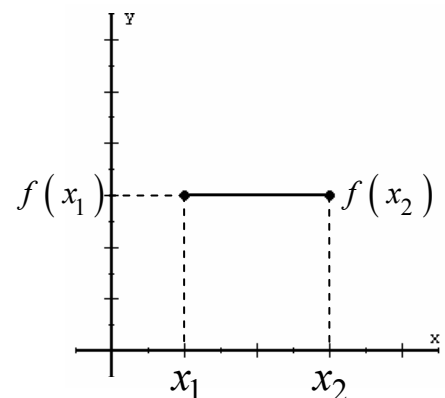
$$f(x_1) < f(x_2)$$

f is Increasing



$$f(x_1) > f(x_2)$$

f is Decreasing



$$f(x_1) = f(x_2)$$

f is Constant