

Reading Graphs

(covers parts of Sullivan 2.2 and 2.3)

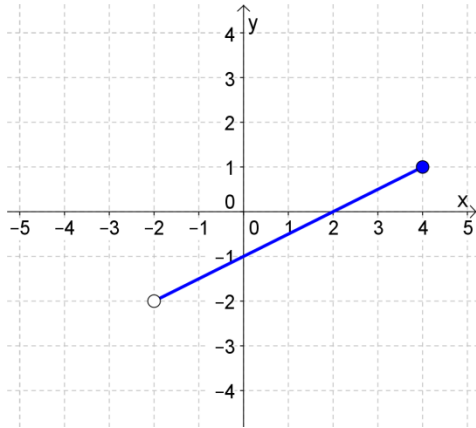
Recall:

The **domain** of a function is the set of all possible **inputs**.

The **range** of a function is the set of all possible **outputs**.

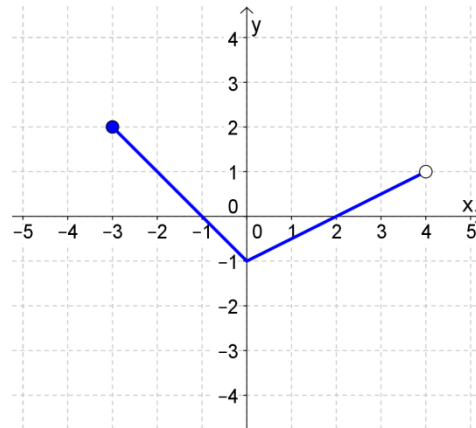
Ex 1.

Use the graph of each function to find its domain and range.



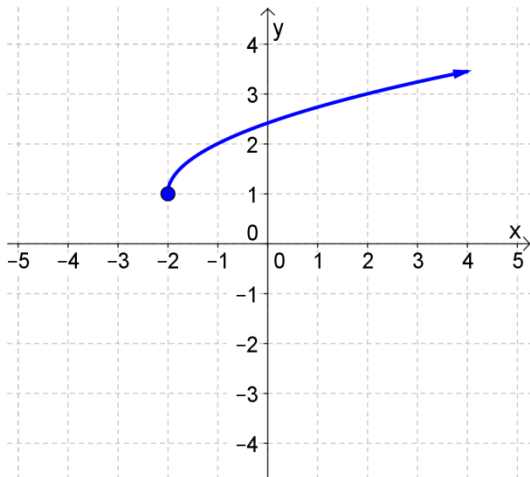
Domain _____

Range _____



Domain _____

Range _____



Domain _____

Range _____

Let $f(x)$ be defined on the interval $a < x < b$. Suppose x_1 and x_2 are in that interval.

f is _____ on that interval if $f(x_2) > f(x_1)$ whenever $x_2 > x_1$

f is _____ on that interval if $f(x_2) < f(x_1)$ whenever $x_2 > x_1$

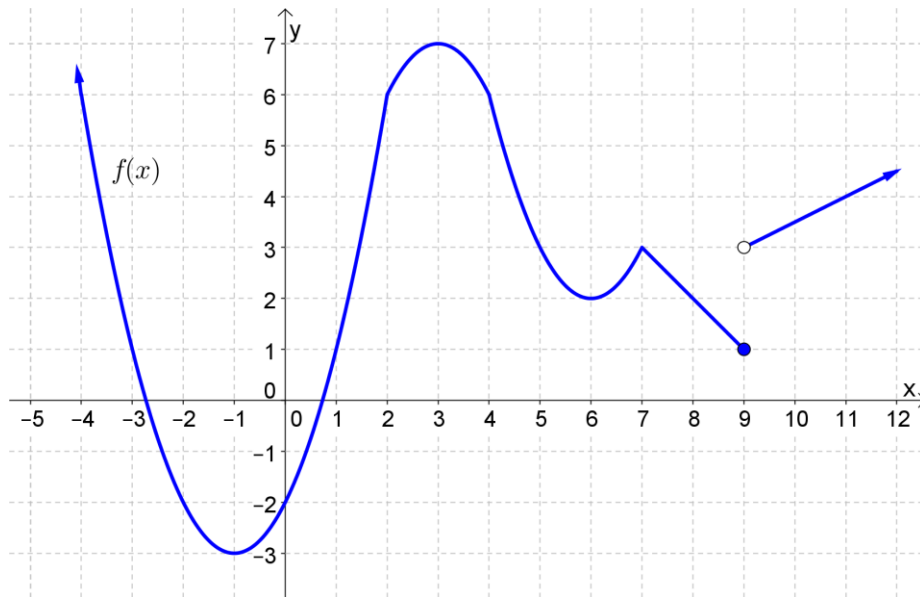
f is _____ on that interval if $f(x_2) = f(x_1)$

Suppose $x = c$ is in the domain of $f(x)$.

$f(c)$ is a _____ of f if $f(c) \geq f(x)$ when x is near c . (Local maxes are peaks.)

$f(c)$ is a _____ of f if $f(c) \leq f(x)$ when x is near c . (Local mins are valleys.)

Ex 2.



Determine the intervals on which $f(x)$ is increasing, decreasing, and constant.

Find all local maxima and minima.

Find the values of x for which $f(x) = 1$.