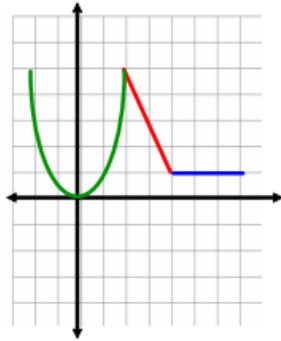


Piecewise Functions

(2 or more functions on same graph)

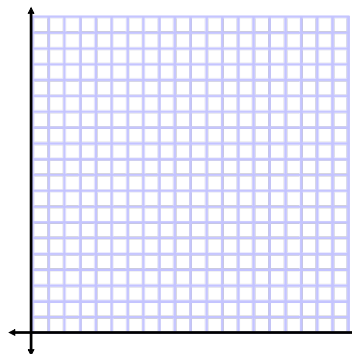


Piecewise function:

is a function made up of two or more functions, each defined within a specific interval of the domain (ie x-value).

Ex. A car's speed between two stops is defined by the following function in which $f(x)$ is the speed in m/sec, and x is the time in secs.

$$f(x) = \begin{cases} 2x^2 & 0 \leq x \leq 3 \\ 18 & 3 < x < 10 \\ -3x + 48 & x \geq 10 \end{cases}$$



At what times was the car moving at 12 m/s?

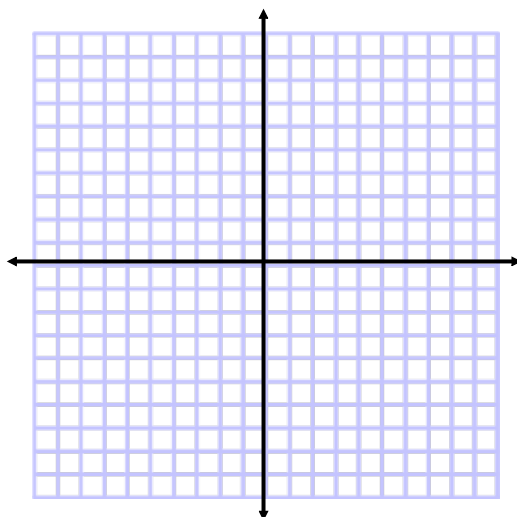
Ex. The temperature outdoors is tracked over the course of 10 hours. Describe the function over:

- 1) the first 3 hours? 2) between 3 and 6 hours 3) between 6-10 hours



Ex. The temperature outside varies according to the following piecewise function:

$$g(x) = \begin{cases} x^2 & -4 \leq x \leq 0 \\ 3x & 0 < x \leq 2 \\ 6 & 2 < x \leq 8 \end{cases}$$



Ex. You decide to hire some painters to paint your house. The price they charge varies according to a piecewise function $h(x)$ depending on how many hours they need to work, represented by x .