

GRAPHING PIECEWISE FUNCTIONS

Graph each piecewise function and label the intercepts. Identify the domain and range. Write the intervals where the function is increasing, decreasing, and/or constant.

$$1) f(x) = \begin{cases} -(x+1)^2 + 9 & \text{if } -4 \leq x \leq 1 \\ -(x-2)^2 + 6 & \text{if } 1 < x \leq 4 \\ 2 & \text{if } x > 4 \end{cases}$$

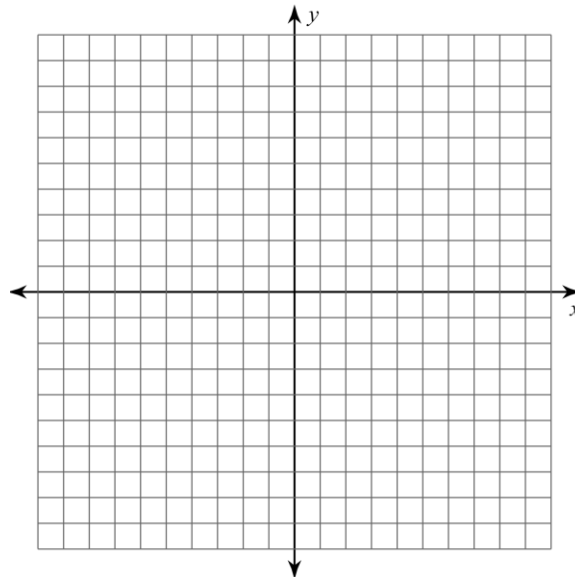
Domain: _____

Range: _____

increasing: _____

decreasing: _____

constant: _____



$$2) g(x) = \begin{cases} 5 & \text{if } x < -2 \\ 2^x - 4 & \text{if } -2 \leq x \leq 3 \\ -2x + 14 & \text{if } x > 3 \end{cases}$$

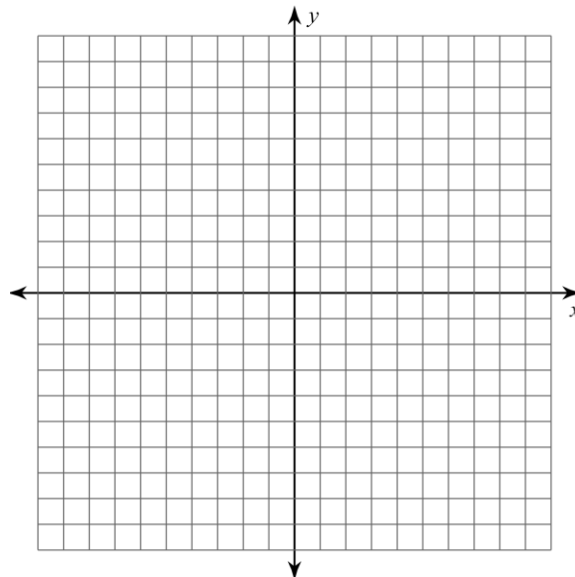
Domain: _____

Range: _____

increasing: _____

decreasing: _____

constant: _____



3) If $f(x)$ is a continuous function, and $g(x)$ is a discontinuous function. What do you think it means for a graph to be continuous?