

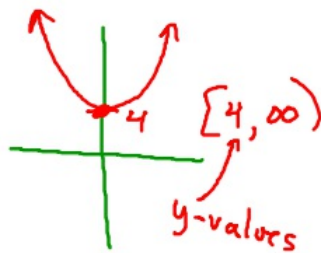
Range

y values

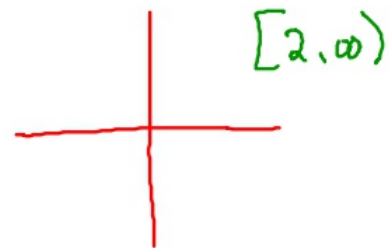
Lowest to Highest

Determine the range of the function and remember how to determine if the graph is a function.

A) $f(x) = 4 + x^2$



B) $f(x) = 2 + \sqrt{9-x}$



C) $f(x) = \frac{x^2}{4-x^2}$
 $(-\infty, -1) \cup [0, \infty)$

D) $f(x) = \frac{3-2x^2}{4+x^2}$
 $(-2, \frac{3}{4}]$

Reminder:
Sometimes a value of x that seems to be a vertical asymptote is actually a hole

Graph the function and tell whether or not the function has a point of discontinuity at $x = 0$. If there is a discontinuity, tell whether the discontinuity is removable or non-removable.

A) $f(x) = \frac{5}{x}$
 $f(0) = \frac{5}{0}$

$x = 0$ V.A.

Point of Discontinuity
Non Removable

B) $f(x) = \frac{x^2+x}{x}$

$f(0) = \frac{0^2+0}{0} = \frac{0}{0}$

Hole - Removable

C) $f(x) = \frac{|5x|}{x}$
 $f(0) = \frac{|5(0)|}{0} = \frac{0}{0}$

Jump discontinuity
Non Removable

D) $f(x) = \frac{2x}{x-4}$ $x \neq 4$

$f(4) = \frac{8}{0}$

$x = 4$
V.A.