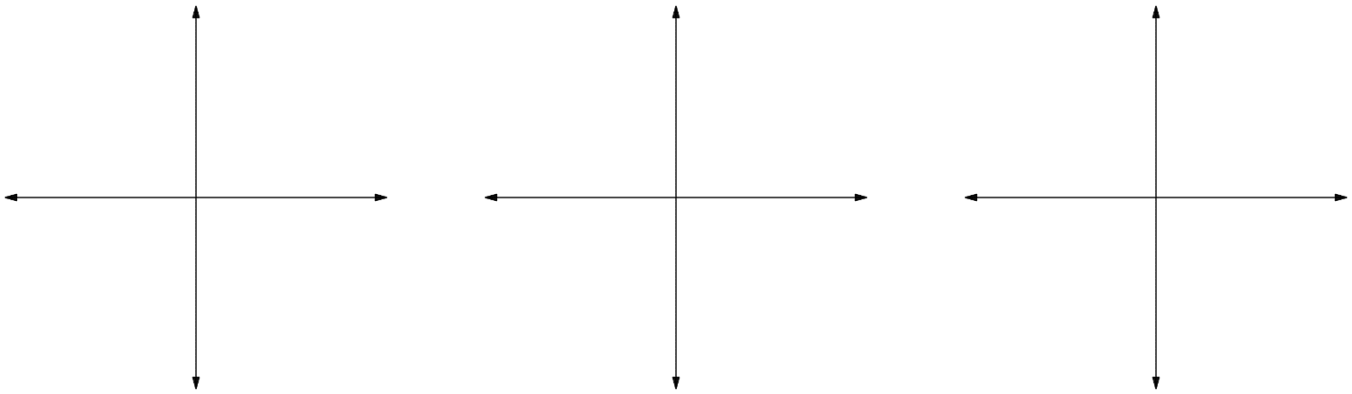
Name: _____ Date: _____

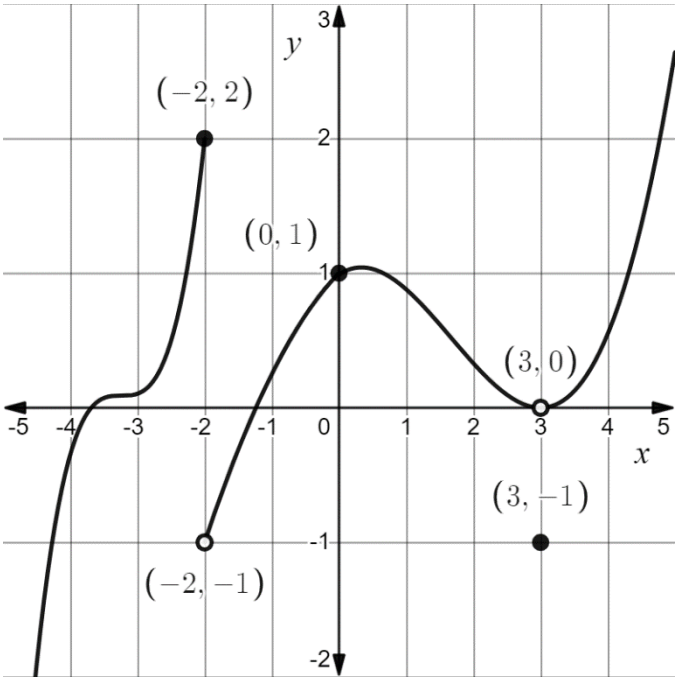
Learning Goal 2.1	Finite limits and continuity.

Continuity

1. 2. 3.



Example Given the graph of $f(x)$ shown below, determine if $f(x)$ is continuous at $x = -2, 0$ and 3.



Assignment # 2 – 5, 7, 13 – 23, 39 – 43, 49 – 55 Quiz Next Day!

Example Determine where the functions are not continuous, if anywhere.

a. $f(x) = \dfrac{x^2 - x - 2}{x - 2}$

b. $g(x) = \dfrac{4x + 10}{x^2 - 2x - 15}$

c. $f(x) = \begin{cases} \dfrac{x^2 - x - 2}{x - 2}, & x \neq 2 \\ 3, & x = 2 \end{cases}$ $x = 2$

d. $h(x) = \begin{cases} x + 1, & x \leq 1 \\ \dfrac{1}{x}, & 1 < x < 3 \\ \sqrt{x - 3}, & x \geq 3 \end{cases}$ $x = 1, 3$

Types of Discontinuity

1. 2. 3. 4.

Intermediate Value Theorem

Example Show that $p(x) = 2x^3 - 5x^2 - 10x + 5$ has a root somewhere in the interval $[-1, 2]$.