

we have

**Rule #0 (polynomial)** Every polynomial is continuous everywhere.

**Rule #1 (rational)** Every rational function is continuous everywhere it's defined.

**Rule #2** Each of the following functions are continuous everywhere they are defined: power (both integer and noninteger powers), trigonometric, inverse trigonometric, exponential, and logarithmic.

**Rule #3** Let  $F$  and  $G$  be functions that are continuous at  $c$  and let  $a, b$  be numbers and let  $n$  be a positive integer; each of the following are continuous at  $c$ :

**Rule #4** Let  $G$  be continuous at  $c$  and let  $F$  be continuous at  $F(c)$ . Then  $F \circ G$  is continuous at  $c$ .