

Let F and G be functions that are continuous at c and let a, b be numbers and let n be a positive integer; 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 Each of the following are continuous at c :

$$aF + bG$$

$$FG$$

$$F/G \quad \text{(provided } G(c) \neq 0 \text{)}$$

$$F^n$$

$$F^{1/n} \quad \text{(provided } F^{1/n} \text{ is defined on a neighborhood of } c \text{).}$$

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