Bing

Sure, here are some of the fundamental properties of limits in mathematics:

1. **Constant Multiple**: The limit of a constant times a function is the constant times the limit of the function. Formally, if $$c$$ is any constant, then $$\lim_{{x \to a}} [c f(x)] = c \lim_{{x \to a}} f(x)$$.

2. **Sum/Difference**: The limit of a sum or difference of functions is the sum or difference of their limits. That is, $$\lim_{{x \to a}} [f(x) \pm g(x)] = \lim_{{x \to a}} f(x) \pm \lim_{{x \to a}} g(x)$$.

3. **Product**: The limit of a product of functions is the product of their limits. Formally, $$\lim_{{x \to a}} [f(x)g(x)] = \lim_{{x \to a}} f(x) \cdot \lim_{{x \to a}} g(x)$$.

4. **Quotient**: The limit of a quotient of functions is the quotient of their limits, provided the limit of the denominator is not zero. That is, $$\lim_{{x \to a}} \frac{{f(x)}}{{g(x)}} = \frac{{\lim_{{x \to a}} f(x)}}{{\lim_{{x \to a}} g(x)}}, \text{{provided }} \lim_{{x \to a}} g(x) \neq 0$$.

5. **Power**: The limit of a function raised to a power is the limit of the function raised to that power. Formally, if $$n$$ is any real number, then $$\lim_{{x \to a}} [f(x)]^n = [\lim_{{x \to a}} f(x)]^n$$.

6. **Root**: The limit of the root of a function is the root of the limit. That is, $$\lim_{{x \to a}} \sqrt[n]{{f(x)}} = \sqrt[n]{{\lim_{{x \to a}} f(x)}}$$.

7. **Constant**: The limit of a constant is just the constant. Formally, if $$c$$ is any real number, then $$\lim_{{x \to a}} c = c$$.

These properties are very useful when calculating limits in calculus.