Theorem: Properties of Limits of Sequences

Let $\lim_{n\to\infty} a_n = L$ and $\lim_{n\to\infty} b_n = K$

1. **Scalar multiple**: $\lim_{n\to\infty}(ca_n) = cL$, c is any real number.
2. **Sum or difference**: $\lim_{n\to\infty}(a_n \pm b_n) = L \pm K$
3. **Product**: $\lim_{n\to\infty}(a_n b_n) = LK$
3. **Quotient**: $\lim_{n\to\infty} \frac{a_n}{b_n} = \frac{L}{K}$, $b_n \neq 0$ and $K \neq 0$