$$\sum_{i=1}^{n} c = cn$$

$$\sum_{i=1}^{n} i = \frac{n(n+1)}{2}$$

$$\sum_{i=1}^{n} i^2 = \frac{n(n+1)(2n+1)}{6}$$

$$\sum_{i=1}^{n} i^3 = \frac{n^2(n+1)^2}{4}$$

$$\sum_{i=1}^{n} \frac{i+1}{n^2}$$

$$\frac{1}{n^2}\left(\sum_{i=1}^{n} i+1\right)$$

$$\frac{1}{n^2}\left(\sum_{i=1}^{n} i + \sum_{i=1}^{n} 1\right)$$

$$\frac{1}{n^2}\left(\frac{n(n+1)}{2} + n\right)$$

$$\frac{1}{n^2}\left(\frac{n^2+n}{2} + \frac{2n}{2}\right)$$

$$\frac{1}{n^2}\left(\frac{n^2+3n}{2}\right)$$

$$\boxed{\frac{n+3}{2n}}$$

$$\lim_{x\to\infty} 3x = \infty$$

$$\lim_{x\to\infty} \frac{1}{x} = 0$$

$$\lim_{x\to\infty} \frac{1}{x^2} = 0$$

26. $$\frac{64}{n^3}\left(\frac{n(n+1)(2n+1)}{6}\right)$$

$$\frac{64}{n^3}\left(\frac{(n^2+n)(2n+1)}{6}\right)$$

$$\frac{64}{n^3}\left(\frac{2n^3+3n^2+n}{6}\right)$$

$$\lim_{n\to\infty} \frac{64}{6}\left(2+\frac{3}{n}+\frac{1}{n^2}\right)$$

$$\frac{18n^2+18n}{2n^2}$$

$$\frac{18}{n^2}\left(\frac{n(n+1)}{2}\right)$$

$$\frac{18(n^2+n)}{2n^2}$$

$$\frac{18n^2}{2n^2}+\frac{18n}{2n^2}$$

$$\frac{18}{2}=9$$

$$\lim_{n\to\infty} \sum_{i=1}^{n} \left(\frac{i^2}{n^3}\right)\left(\frac{1}{n}\right)$$

$$\lim_{n\to\infty} \frac{1}{n^3} \sum_{i=1}^{n} i^2$$

$$\lim_{n\to\infty} \frac{1}{n^3} \frac{(n(n+1)(2n+1))}{6}$$

$$\lim_{n\to\infty} \frac{2n^3+3n^2+n}{6n^3}$$

$$\lim_{n\to\infty} \frac{2}{6} + \frac{3}{6n} + \frac{1}{6n^2}$$

$$\frac{2}{6} = \frac{1}{3}$$