

1. Calcula

$$\lim_{n \rightarrow \infty} \frac{n^3 + 2n - 1}{5n^3 + n^2 - 2n + 1} = \frac{1}{5}$$

2. Calcula

$$\lim_{x \rightarrow \infty} \sqrt{n^2 - n} - \sqrt{n^2 + 4n} = \frac{-5}{2}$$

3. Calcula

$$\lim_{x \rightarrow \infty} \ln(1 + n + \sqrt{n}) - \ln(n) = 0$$

4. Calcula

$$\lim_{x \rightarrow \infty} \frac{1^3 + 2^3 + \dots + n^3}{n^4} = \frac{1}{4}$$

5. Calcula

$$\lim_{x \rightarrow \infty} \left(\frac{n^3 - 2n}{n^3 + 3n^2 - 2n - 1} \right)^n = e^{(-3)}$$

6. Calcula

$$\sum_{n=2}^{\infty} \frac{n+2}{n^3-n} = \frac{5}{4}$$

7. Calcula

$$\sum_{n=2}^{\infty} \frac{1}{n^3-n} = \frac{1}{4}$$

8. Calcula

$$\sum_{n=0}^{\infty} (-1)^n x^n = -1^n \sum_{n=0}^{\infty} x^n$$

9. Calcula

$$\sum_{n=0}^{\infty} (-1)^n 4^n x^{2n} = 4^n (-1)^n \sum_{n=0}^{\infty} x^{2n}$$

10. Calcula la serie de Taylor en el origen de la función

$$f(x) = \frac{1}{1+x^2} = -8x^3 + 4x^2 - 2x + 1$$

11. Calcula la serie de Taylor en el origen de la función

$$g(x) = x \cos(x) = \frac{-1}{2}x^3 + x$$