1. Evaluate the following infinite sums

(a) \(0.6 + 0.36 + 0.216 + 0.1296 + 0.07776 + \ldots\)

(b) \(\sum_{n=2}^{\infty} \frac{1}{n^2 - 1}\)

2. Determine whether the following series converge

(a) \(\frac{1}{2 \ln 2} + \frac{1}{3 \ln 3} + \frac{1}{4 \ln 4} + \ldots\)

(b) \(\sum_{n=1}^{\infty} \frac{5 + 2n}{(1 + n^2)^2}\)

3. Find a power series representation for \(\frac{1}{4 + x^2}\) and determine its interval of convergence.

4. Find two unit vectors in the plane whose angle with \(u = [5, 4]\) is \(\pi/6\). Sketch.

5. Given three points \(A = [0, -2, 0]\), \(B = [4, 1, -2]\), and \(C = [5, 3, 1]\) find the area of the triangle having these points as vertices. Also find a unit vector perpendicular to the plane containing these points. Sketch.