**TEST 2**

**QUESTION 1 (5 marks)**

Find the sum for the first 30th terms of the following series

**QUESTION 2 (6 marks)**

Determine if the following series converge or diverge

(a)

(b)

**QUESTION 3 (6 marks)**

Let and **.**

1. Find the values of if **u** and **v** are orthogonal.
2. If , find the angle between **u** and **v.**

**QUESTION 4** **(3 marks)**

Find the parametric equations for the line through the point (5, 2, 9) and perpendicular to the plane