Name: Score:

Math 1321 Week 5 Worksheet

1. Find the line L through the points $P = (-2, 1)$ and $Q = (3, 2)$
   (a) Write L as a line in vector(parametric) form

   (b) Convert your previous answer to a line in scalar(standard) form, i.e. $ax + by = c$.

2. Find the equation of the plane that passes through the point $P = (-3, 1, 1)$ and contains the line L, $x = 1 - t$, $y = 2 + t$, and $z = 4 - 6t$.

   (a) Write your answer in part a in scalar(standard) form, i.e $ax + by + cz = d$.

   (b) Verify your answer by checking that P and two points on the line L belong to the plane.

3. Find the distance from the point $P = (-6, 3, 5)$ to the plane $3x + 2y + 6z = 5$.

4. Find the distance between the parallel planes $6z = 4y - 2x$ and $9z = 1 - 3x + 6y$.

Review

5. Determine whether the series is absolutely convergent for $r < 1$.

$$\sum_{k=1}^{\infty} k(r)^k$$

6. Prove that .999999... = 1

7. Compute the Taylor series centered about a = 1 for $f(x) = 10^x$.