

Math 120, Spring 2013, Recitation 5

1. Remaining problems from last week.
2. Find an equation of the plane
 - a. passing through the point $(1, -4, \pi)$ and parallel to the plane $x + 2y - 3z = 2$.
 - b. passing through the point $(-2, 1, 3)$ and containing the line $\frac{3x - 2}{6} = \frac{y + 2}{4} = \frac{z - 1}{3}$.
 - c. containing the lines $\frac{x + 2}{e} = y - 1 = 3 - z$ and $y = 1, z = 3$.
3. Find parametric equations of the line
 - a. of intersection of the planes $x + y - z = 2$ and $2x - y + 3z = 1$.
 - b. passing through the point $(1, 0, 6)$ and perpendicular to the plane $x + 3y + z = 5$.
 - c. which is contained in the plane $x + 2y - 3z = 1$, passing through the point $(-1, 1, 0)$ and perpendicular to the line $5 - x = \frac{y + 1}{2} = \frac{z}{3}$.
4. Let L_1 be the line $5 - x = \frac{y + 1}{2} = \frac{z}{3}$ and L_2 be the line $\frac{x + 2}{3} = y - 1 = 3 - z$.
 - a. Show that L_1 and L_2 are skew lines.
 - b. Find an equation of the plane containing L_1 and parallel to L_2 .
 - c. Find the distance between the lines L_1 and L_2 by finding the distance between the point $(-2, 1, 3)$ (which is a point on L_2) and the plane you found in part (b).