

Name: _____

1. Find the equation of the plane through the point $(6, 3, 2)$ and perpendicular to the vector $\langle -2, 1, 5 \rangle$.

2. What is the equation of the plane which contains the points $(1, 2, 1)$, $(2, -1, 0)$ and $(-2, 3, -2)$?

3. Are the following planes parallel, perpendicular, or neither? If neither, what is the angle between them?

$$2x = 4y - z \quad x + 2y + 2z = 1$$

4. Where does the line through $(1, 0, 1)$ and $(4, -2, 2)$ intersect the plane $x + y + z = 6$?

5. Find parametric equations and symmetric equations for the line of intersection of the planes $2x - 2y + z = 1$ and $x + y + z = 1$. What is the angle between the planes?
6. Find the equation of the plane that contains the line of intersection of the planes $x - z = 1$ and $y + 2z = 3$ and is perpendicular to the plane $x + y - 2z = 1$
7. What is the distance between the plane $6z = 4y - 2x$ and the plane $9z = 1 - 3x + 6y$?
8. What is the perpendicular distance from the point $(0, 1, 3)$ to the line given by $x = 2t$, $y = 6 - 2t$, and $z = 3 + t$?