

1. Find the line through the point $P_0 = (2, 1, 4)$ in direction $\vec{v} = (3, 1, 2)$.
2. Find the plane through $P_0 = (1, 0, 2)$ perpendicular to $\vec{n} = (3, -1, 2)$.
3. Find the point where your line from #1 intersects your plane from #2.
4. Find the line through $P_0 = (1, 8, 2)$ perpendicular to the plane $2x - 3y + 2z - 4 = 0$.

Where does the line intersect the plane?

How close is the point P_0 to the plane?