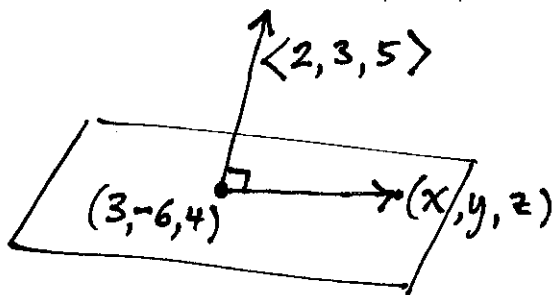


WRITE YOUR NAME:

MAC 2313 Quiz 4
Thursday January 25th

Find an equation of the plane that passes through the point $(3, -6, 4)$ and is perpendicular to the vector $\langle 2, 3, 5 \rangle$.



That plane consists of all points (x, y, z) with the property that the vector from $(3, -6, 4)$ to (x, y, z) is perpendicular to the vector $\langle 2, 3, 5 \rangle$.

That is, $\langle x-3, \underbrace{y-(-6)}_{y+6}, z-4 \rangle$ must be perpendicular to $\langle 2, 3, 5 \rangle$.

$$\text{So } \langle 2, 3, 5 \rangle \cdot \langle x-3, y+6, z-4 \rangle = 0$$

$$2(x-3) + 3(y+6) + 5(z-4) = 0$$

$$2x - 6 + 3y + 18 + 5z - 20 = 0$$

$$2x + 3y + 5z - 8 = 0$$

$$2x + 3y + 5z = 8$$

} Any of these
is correct