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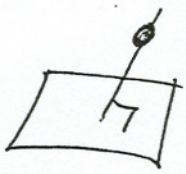
3. Find the equations of the line which contains $(1, 2, 4)$ and is perpendicular to $2x + 9y + 4z = 8$.



$$\frac{x-1}{2} = \frac{y-2}{9} = \frac{z-4}{4}$$

4. Find the equation of the plane which contains $(3, 2, 1)$ and is perpendicular to $\frac{x-3}{5} = \frac{y-2}{3} = \frac{z-6}{7}$.

$$5(x-3)+3(y-2)+7(z-1)=0$$