Calculus III
Math 241-002
Fall 2025
Quiz 2

Name Solution

Find a vector equation, parametric equations, and symmetric equations for the line through the point (2, -1, 4) and parallel to the vector $3\mathbf{i} + 4\mathbf{j} - 6\mathbf{k}$.

$\vec{r} = \vec{r}_0 + \vec{v}t$

$\vec{r}_0 = \langle 2, -1, 4 \rangle$, $\vec{v} = \langle 3, 4, -6 \rangle$

$\vec{r} = \langle 2 + 3t, -1 + 4t, 4 - 6t \rangle$

$x = 2 + 3t$

$y = -1 + 4t$

$z = 4 - 6t$

$\frac{x-2}{3} = \frac{y+1}{4} = \frac{z-4}{-6}$