

11.5 #4

A vector parallel to the xy -plane and xz -plane is $\vec{v} = \langle 1, 0, 0 \rangle$.

[Any vector of the form $\langle k, 0, 0 \rangle$ would suffice.]

$$\text{So the line is } \begin{cases} x = -2 + 1t \\ y = 1 + 0t \\ z = 4 + 0t \end{cases} = \begin{cases} x = -2 + t \\ y = 1 \\ z = 4 \end{cases}$$

[Again, note that this is the same line as

$$\begin{cases} x = -2 + kt \\ y = 1 \\ z = 4 \end{cases} \quad \text{for any real number } k.]$$