

1. Find parametric equations for the line passing through  $(-6, -1, 0)$  and  $(2, -3, 5)$ .

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

$$\vec{v} = \langle 8, -2, 5 \rangle$$

$$\vec{r} = \langle -6, -1, 0 \rangle + t\langle 8, -2, 5 \rangle$$

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| $x = -6 + 8t$ $y = -1 - 2t$ $z = 0 + 5t$ |
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Great

2. Find an equation for the plane passing through  $(-4, 1, 2)$  and parallel to the plane  $x + 2y + 5z = 3$ .

$$a(x - x_0) + b(y - y_0) + c(z - z_0) = 0$$

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

$$\vec{n} = \langle 1, 2, 5 \rangle$$

$$\vec{n} \cdot (\vec{r} - \vec{r}_0) = 0$$

$$\langle 1, 2, 5 \rangle \cdot (\vec{r} - \langle -4, 1, 2 \rangle) = 0$$

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| $1(x + 4) + 2(y - 1) + 5(z - 2) = 0$ |
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Excellent