1. Find parametric equations for the line passing through the point (1,2) and parallel to the vector **v** =<2,3>.

$$x = 1 + 2t, \quad y = 2 + 3t$$

2. Determine where the lines

$$L_1: \mathbf{r}(t)=(1-t)\mathbf{i} + 2t\mathbf{j}$$

and

$$L_2: \mathbf{r}(t)=(17+2t)\mathbf{i} + (1-4t)\mathbf{j}$$

are parallel, perpendicular, or neither.

$$\vec{V_1} = \langle -1, 2 \rangle \Rightarrow \vec{V_1} = -\tfrac{1}{2}\vec{V_2}$$

$$\vec{V_2} = \langle 2, -4 \rangle$$

$$\Downarrow$$

$$\vec{V_1} \parallel \vec{V_2} \Rightarrow L_1 \parallel L_2$$

parallel

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