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Total time for the test: 13 minutes

1. Let $\vec{u} = [p, -1, 1]$ and $\vec{v} = [p + 2, q, 3]$.

a) Find all p, q for which $\vec{u} \parallel \vec{v}$.

b) For $p = q = -1$ find, to the nearest degree, the angle between \vec{u} and \vec{v} .

(7p)

2. A plane contains 3 points: $A = (2, 3, 4)$, $B = (0, -2, -1)$ and $C = (1, -1, 1)$. Find an equation of this plane in

a) cartesian form,

b) parametric form.

(6p)