

I. SUBSPACES

11. Is subspace on \mathbb{R}^3 the $U = \{(x_1 + 2x_2, x_1 + x_2, x_2) \mid x_1, x_2 \in \mathbb{R}\}$ set?
12. Is subspace on \mathbb{R}^3 the $U = \{(x_1 + x_3, x_1 - x_3, 4x_3) \mid x_1, x_2 \in \mathbb{R}\}$ set?
13. Is subspace on \mathbb{R}^3 the $U = \{(2x_1 + x_2, 2x_1, -3x_2) \mid x_1, x_2 \in \mathbb{R}\}$ set?

II. BASES

14. What are the vectors $\mathbf{a} = (1, 0, 0)$, $\mathbf{b} = (0, 1, 0)$, and $\mathbf{c} = (0, 1, 0)$ in the $(-1, 0, 2)$; $(0, -1, 3)$; $(-2, 1, 1)$ basis.
15. $\mathbf{a} = (1, -1, 2)$ in the $(-1, 1, 0)$; $(1, 1, 0)$; $(0, 0, 1)$ basis?
16. What is the vector $\mathbf{a} = (-1, 1, -2)$ in the $(-1, 1, 1)$; $(0, 1, 0)$; $(2, 3, 1)$ basis?

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