

Challenge Set #3

- 1) Find the equation of the plane parallel to and equidistant from, the skew lines $\ell_1 : (x, y, z) = (2, -4, 3) + t(3, 5, 1)$ and $\ell_2 : (x, y, z) = (0, -6, 5) + k(5, 1, 0)$. $\{ x - 5y + 22z - 114 = 0 \}$
- 2) Let $\ell_1 : (x, y, z) = (3, 4, 1) + t(2, 1, 2)$ and $\ell_2 : (x, y, z) = (4, 17, -3) + k(4, 2, -1)$ be two lines. Find the equation of the plane that contains ℓ_1 and the point P_2 on ℓ_2 that is a minimum distance from ℓ_1 . $\{ 4x + 2y - 5z - 15 = 0 \}$
- 3) Determine the plane that contains both lines $\ell_1 : (x, y, z) = (-1, 3, 5) + t(1, -2, 6)$ and $\ell_2 : (x, y, z) = (-13, -8, -1) + k(3, 1, 3)$, if possible.

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