HW (due this Friday) 1.2: 25, 26, 29, 34, 36, 38; 1.3: 8, 10, 14, 17, 20, 25, 28; 1.4: 4, 10, 12, 13, 17, 19, 25; 1.5: 3, 8, 9, 15, 20

Find an equation of the line containing the point \( p \) and is parallel to the vector \( a \)

Find an equation of the plane containing the point \( p \) and containing the vectors \( a \) and \( b \)

Find the equation of the plane containing the points \( (1, 2, 3), (5, 4, 7), (0, 0, 6) \).

Normal form:

Find the equation of the plane containing the point \( p \) and orthogonal to the vector \( n \)

Find the equation of the plane containing the points \( (1, 2, 3), (5, 4, 7), (0, 0, 6) \).
\( \mathbf{n} \cdot [(\mathbf{x} - \mathbf{p})] = 0 \)

\[
(n_1, n_2, n_3) \cdot [(x_1, x_2, x_3) - (p_1, p_2, p_3)] = 0
\]

\[
(n_1, n_2, n_3) \cdot (x_1 - p_1, x_2 - p_2, x_3 - p_3) = 0
\]

\[
n_1(x_1 - p_1) + n_2(x_2 - p_2) + n_3(x_3 - p_3) = 0
\]

\[
n_1x_1 + n_2x_2 + n_3x_3 = n_1p_1 + n_2p_2 + n_3p_3
\]

Equation of a plane in \( \mathbb{R}^3 \) in normal form:

\[
Ax + By + Cz = D
\]

Find the intersection of the planes \( x - 2y + 5z = 0 \) and \( 3x + 4y = 0 \)

Find the distance between the point \((1, 2, 3)\) and the line \(\mathbf{x} = t(4, 2, 5) + (0, 6, 2)\)

Equation of plane in other form \( \mathbf{x} = s\mathbf{a} + t\mathbf{b} + \mathbf{p} \)