

Assignment 4 – Parts 1 & 2 – Math 243

Textbook exercises:¹

Section 11.5: 22, 24, 26, 32, 40, 42, 48, 70 (when the book asks for the equation for a plane, give your answer in the form $Ax + By + Cz = D$)

Other exercises:

- (1) Find a parametric vector equation for the plane containing the three points $P = (1, 1, 5)$, $Q = (2, -1, 2)$, and $R = (-3, -2, -5)$. Then, find a vector perpendicular to this plane.
- (2) Find a parametric vector equation for the plane containing the parallelogram with vertices $P = (0, 1, 3)$, $Q = (1, 1, 3)$, $R = (0, 0, 3)$, and $S = (1, 0, 3)$. Then, write down a non-parametric component equation for this plane.
- (3) Find a non-parametric component equation for the plane perpendicular to $\mathbf{n} = (4, -1, 2)$ through the point $P_0 = (1, 3, 7)$.
- (4) Find a non-parametric component equation for the plane through the point $P_0 = (1, 2, 3)$ containing the two vectors $\mathbf{u} = (3, 0, 1)$ and $\mathbf{v} = (1, 2, -1)$.

¹From Hass, Weir, and Thomas' *University calculus: alternate edition*