3.6.2

$A=(1,-1,2)$, $B=(0,-1,3)$, $C=(3,0,2)$

$N = AB \times AC$

$A \times B = B - A$

$A \times C = C - A$

$$A \times B = \begin{bmatrix} 1 & -1 & 2 \\ 0 & -1 & 3 \end{bmatrix} = (-1,0,1)$$

$$A \times C = \begin{bmatrix} 1 & -1 & 2 \\ 3 & 0 & 2 \end{bmatrix} = (2,1,0)$$

$$N = A \times B \begin{bmatrix} i & j & k \\ -1 & 0 & 1 \\ 2 & 1 & 0 \end{bmatrix} =$$

$$N = i \begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix} - j \begin{bmatrix} -1 & 1 \\ 2 & 0 \end{bmatrix} + k \begin{bmatrix} -1 & 0 \\ 2 & 1 \end{bmatrix}$$

$= 0-1 \qquad = 0-2 \qquad = -1-0$

$= -1 \qquad = -2 \qquad = -1$

$N = (-1,-2,-1)$ $\qquad$ $A = (1,-1,2)$

$N_1(X - X_a) + N_2(Y - Y_a) + N_3(Z - Z_a)$

$-1(X-1) + (-2(Y-(-1)) + (-1(Z-2)$

$-X - 1 - 2Y - 2 - Z + 2 = 0$

$-X - 2Y + Z = 1$ so the plan is (1)