

$P: A(2, 1, 1)$   
 $B(6, -1, 4)$   
 $C(0, 1, 0)$

$\vec{AB} = \langle 4, -2, 3 \rangle$   
 $\vec{AC} = \langle -2, 0, -1 \rangle$   
 $\vec{AB} \times \vec{AC} = \langle 2, -2, -4 \rangle$

A vector  $m = \langle x-2, y-1, z-1 \rangle$

$2(x-2) - 2(y-1) - 4(z-1) = 0$

$2x - 2y - 4z = 2$

$ax + by + cz = d$

$A(6, 0, -2)$  Find eq. of the plane.

$\vec{AB} = \langle 1, 0, 2 \rangle$   
 $\vec{AC} = \langle 0, 2, 1 \rangle$

$\vec{AB} \times \vec{AC} = \langle -4, 1, 2 \rangle$

$\rightarrow (x-6, y, z+2) \cdot \langle -4, 1, 2 \rangle = 0$

$-4(x-6) + y + 2(z+2) = 0$

$-4x + y + 2z = -20$

$$P_1: 2x - 3y + z = 6 \quad \left. \vphantom{P_1} \right\} N_1 = \langle 2, -3, 1 \rangle$$

$$P_2: x + y - 2z = 4 \quad \left. \vphantom{P_2} \right\} N_2 = \langle 1, 1, -2 \rangle$$

$$N_1 \times N_2$$

$$\langle x, y, z \rangle$$

$$N_1 \neq kN_2$$

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