

$$(17.) \quad [\overrightarrow{(x, y, z)} - \overrightarrow{(1, -1, 2)}] \cdot \overrightarrow{(1, 0, -1)} = 0 \quad (9)$$

$$(a) \quad x - z = \overrightarrow{(1, -1, 2)} \cdot \overrightarrow{(1, 0, -1)} = 1 - 2 = -1$$

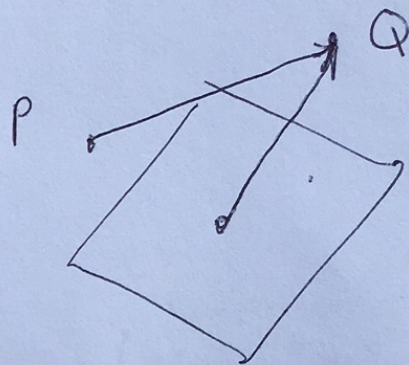
$$(18.) \quad \text{Dist} = |\text{Proj}_{\vec{n}} \overrightarrow{PQ}|$$

$$= \overrightarrow{PQ} \cdot \frac{\vec{n}}{|\vec{n}|}$$

$$= [\overrightarrow{(1, 3, -1)} - \overrightarrow{(1, -1, 2)}] \cdot \frac{\overrightarrow{(1, 0, -1)}}{\sqrt{2}}$$

$$= \overrightarrow{(0, 4, -3)} \cdot \overrightarrow{(1, 0, -1)} \frac{1}{\sqrt{2}}$$

$$= \frac{3}{\sqrt{2}} = \boxed{\frac{3\sqrt{2}}{2}}$$



(c)