

15. $|\vec{A} \times \vec{B}| = \begin{vmatrix} \underline{i} & \underline{j} & \underline{k} \\ 1 & -1 & 2 \\ 1 & 0 & 1 \end{vmatrix}$

$= |\underline{i}(-1) - \underline{j}(1-2) + \underline{k}(1)| = |(-1, 1, 1)|$
 $= \sqrt{3}$

16. $\text{Proj}_{\vec{B}} \vec{A} = \left(\vec{A} \cdot \frac{\vec{B}}{|\vec{B}|} \right) \frac{\vec{B}}{|\vec{B}|} = \frac{\vec{A} \cdot \vec{B}}{|\vec{B}|^2} \vec{B}$

$\vec{A} \cdot \vec{B} = (1, -1, 2) \cdot (1, 0, 1) = 1 + 2 = 3$

$|\vec{B}| = \sqrt{1^2 + 0^2 + 1^2} = \sqrt{2}$

$\text{Proj}_{\vec{B}} \vec{A} = \frac{3}{2} \vec{B} = \frac{3}{2} (1, 0, 1)$

e

none of the above