

- $AB = (2, 1, 1)$
- $AC = (1, -1, 2)$
- $AD = (0, -2, 3)$

$$Area = \|AB \cdot (AC \times AD)\| = \left\| \det \begin{pmatrix} 2 & 1 & 1 \\ 1 & -1 & 2 \\ 0 & -2 & 3 \end{pmatrix} \right\| = |2 \cdot (-3 - (-4)) - 3 + (-2)| = |2 \cdot (7) - 3 - 2| = 9$$