

Adjacent side - vectors:

$$u = \begin{pmatrix} 1 \\ -2 \\ 0 \end{pmatrix}, \quad v = \begin{pmatrix} 2 \\ 3 \\ -1 \end{pmatrix}$$

① First diagonal: $d_1 = u + v$

$$d_1 = \begin{pmatrix} 1+2 \\ -2+3 \\ 0+(-1) \end{pmatrix} = \begin{pmatrix} 3 \\ 1 \\ -1 \end{pmatrix}$$

Its length is

$$\|d_1\| = \sqrt{3^2 + 1^2 + (-1)^2} = \sqrt{9+1+1} = \sqrt{11} \\ \approx 3.317$$

② Second diagonal: $d_2 = v - u$:

$$d_2 = \begin{pmatrix} 2-1 \\ 3-(-2) \\ -1-0 \end{pmatrix} = \begin{pmatrix} 1 \\ 5 \\ -1 \end{pmatrix}$$

Its length is

$$\|d_2\| = \sqrt{1^2 + 5^2 + (-1)^2} = \sqrt{1+25+1} = \sqrt{27} \\ \approx 5.196$$

Answer:

$$u+v = 3.317$$

$$v-u = 5.196$$