We do not deal with vectors, we deal with their components.

Here is an algorithm for adding vectors. The diagram is Figure 3.9 on page 61.

\[ \vec{C} = \vec{A} + \vec{B} \]

1. **Given** \( A, \theta_A \) and \( B, \theta_B \)
2. **Find components**
   \( A_x = A \cos \theta_A, A_y = A \sin \theta_A \)
   \( B_x = B \cos \theta_B, B_y = B \sin \theta_B \)
3. **Add like components**
   \( C_x = A_x + B_x, \quad C_y = A_y + B_y \)
4. **Return to magnitude and direction format**
   \[ C = \sqrt{C_x^2 + C_y^2} \]
   \[ \theta_C = \tan^{-1} \frac{C_y}{C_x} \]

*Be careful with the angles given. The equations hold for angles measured counterclockwise from the +x-axis.

**Be careful with tan\(^{-1}\) function on your calculator. If the x-component is negative, add 180° to the value found by your calculator.