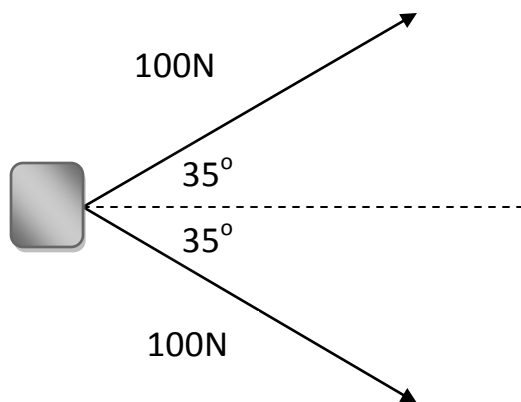


# Higher Physics Assessment 01

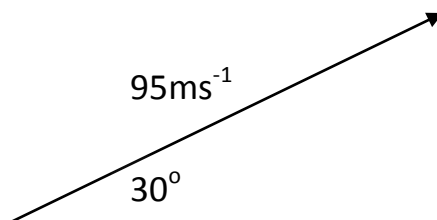
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1. A robot worker at a car plant travels 8 metres due east, then 4 metres due south and finally 4 metres due west. The complete journey takes half an hour.
  - a. Find the displacement from the start of the journey.
  - b. Calculate the average velocity of the robot worker.
2. Two tug boats pull a large sea platform with forces as shown below:



Using a scale diagram, or otherwise, calculate the magnitude and direction of the resultant force acting on the sea platform.

3. A tennis ball is struck at an angle of  $30^\circ$  to the horizontal with a velocity of  $95 \text{ ms}^{-1}$



Find the horizontal and vertical components of the tennis ball's velocity.