

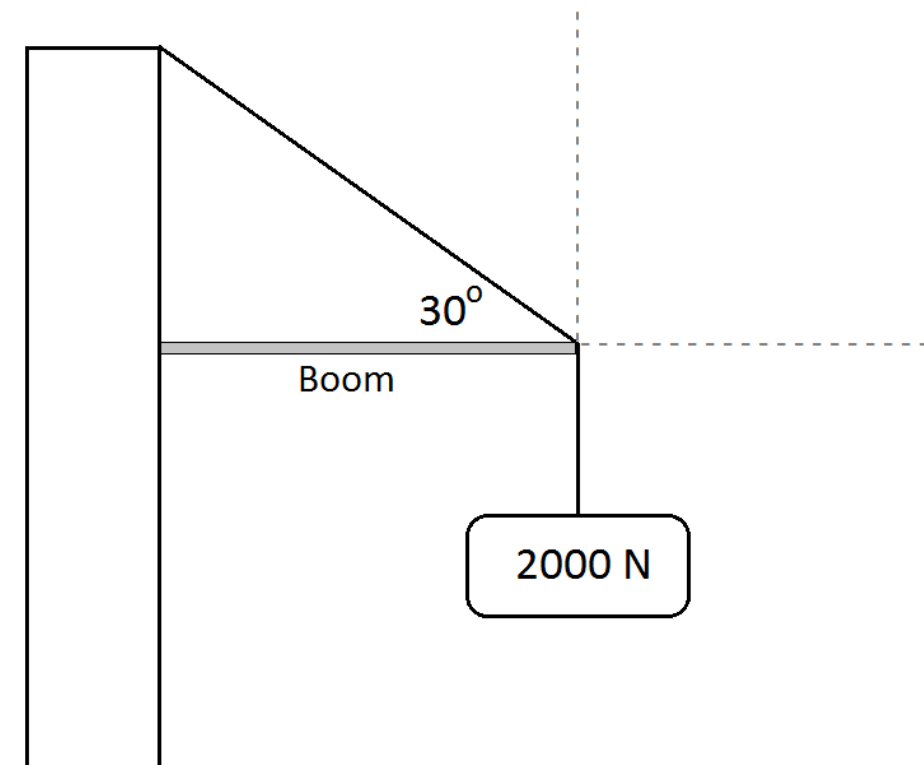
Vector Worksheet

1. A guy on a pier sees you on a ship going east at 40 km/hr. On the ship you are riding a bike at a velocity of 20 km/hr, 35° south of east. While riding the bike you throw a ball with a velocity of 30 km/hr, 65° south of west. What is the resultant velocity of the ball as seen from the guy on the pier?

<i>Vector</i>	$A_x = A \cdot \cos \theta$	$A_y = A \cdot \sin \theta$

TOTALS:

2. Find the tension in the cable and the outward thrust exerted by the boom.



3. A force of 60 N acting west, and a force of 140 N acting north act concurrently on a point. What is the magnitude and direction of the resultant force? Draw the equilibrant force. Solve graphically using a scale of 1 cm = 20 N.



4. Solve problems 3, this time mathematically. For the final answer, make sure you give the magnitude, direction and heading of your resultant and equilibrant.

Final answer for resultant:

Final answer for equilibrant:

5. Use the component method to find the resultant of the following four forces, all acting concurrently on an object:
- 50 N, 30° north of east
 - 70 N, 45° south of east
 - 40 N, 60° north of west
 - 20 N, 20° south of west