PRE-CALCULUS · HOMEWORK · ADVANCED

Solve Force and Velocity Problems With Vectors

SCORE / 25

01 Part A · Practice

Write each force or velocity as $\langle F\cos\theta, F\sin\theta\rangle$, add the vectors, then give the resultant's magnitude and direction angle.

1 ●○○ Forces of 139.3 N at 163° and 171.8 N at 54° act on an object. Find the magnitude and direction of the resultant. Round to tenths.

2 ●○○ A 106.6-lb force acts at 57° above the horizontal. Find its horizontal and vertical components. Round to tenths.

3 ●○○ Forces $\langle 45, -55\rangle$ N and $\langle -25, -70\rangle$ N act on a point. What third force keeps the point in equilibrium (net force $\mathbf{0}$)?

4 ●○○ A 98.6-lb force acts at 6° above the horizontal. Find its horizontal and vertical components. Round to tenths.

5 ●○○ Forces $\langle -10, 40\rangle$ N and $\langle 10, -25\rangle$ N act on a point. What third force keeps the point in equilibrium (net force $\mathbf{0}$)?

6 ●○○ Forces of 106.3 N at 131° and 196.3 N at 159° act on an object. Find the magnitude and direction of the resultant. Round to tenths.

7 ●○○ Forces $\langle -20, 75\rangle$ N and $\langle -25, 50\rangle$ N act on a point. What third force keeps the point in equilibrium (net force $\mathbf{0}$)?

8 ●○○ A 38.3-lb force acts at 84° above the horizontal. Find its horizontal and vertical components. Round to tenths.

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Preview - the full worksheet and its answer key are at primeworksheet.com