

Answer on Question #48309, Physics, Mechanics | Kinematics | Dynamics

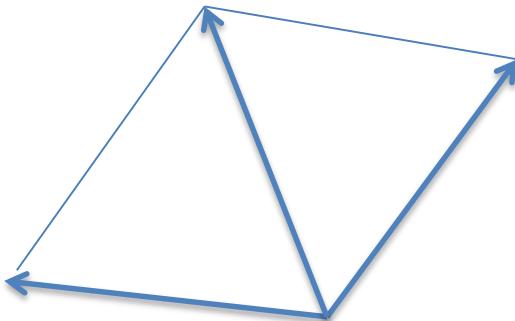
Question:

two forces act on a point object as follows : 100 N at 170° and 100 N at 50°.

Find the resultant force

- a) 110 N at 50°
- b) 110 N at 100°
- c) 100 N at 110°
- d) 100N at 50°

Answer:



Components of the resultant force equals:

$$F_x = 100 \cos 50^\circ + 100 \cos 170^\circ$$

$$F_x = 100 \sin 50^\circ + 100 \sin 170^\circ$$

The resultant force equals:

$$F = \sqrt{F_x^2 + F_y^2} = 100 \text{ N}$$

Angle equals:

$$\arctan \frac{F_y}{F_x} = 110^\circ$$

Answer: c) 100 N at 110°

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