

Answer on question #53656, Physics / Mechanics — Kinematics — Dynamics

Question Two forces with magnitudes of 131 and 52 newtons act on point with a resultant force of 100 newtons. Find the angle, in radians, between the forces.

Solution The cosine of angle is

$$\cos \alpha = \frac{|a|^2 + |b|^2 - |(b - a)|^2}{2|a||b|} = \frac{131^2 + 52^2 - 100^2}{2 \cdot 131 \cdot 52} \approx 0.724$$

So the angle itself is

$$\alpha = \arccos 0.724 \approx 0.761$$

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