

Answer on Question #63044-Physics-Other

A resultant force of 200 N acts on a car, where the x-component of force is 160 N, find :

1. The y-component of the force.
2. The direction of motion.

Solution

1. The y-component of the force is

$$F_y = \sqrt{(F)^2 - (F_x)^2} = \sqrt{(200)^2 - (160)^2} = 120 \text{ N}.$$

2. The angle between force and positive x-direction is

$$\theta = \tan^{-1} \frac{120}{160} = 37^\circ.$$

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