Answer on Question #39305, Physics, Mechanics | Kinematics | Dynamics

A 300 kg sailboat accelerates at 0.5 m/s2 at angle 25 degrees N of E, find the magnitude and direction of the force responsible for this acceleration

Solution:

Given:

m = 300 kg

a = 0.5 m/s^2

The magnitude of force is equated to the product of the mass times the acceleration.

$$F = ma = 300 \cdot 0.5 = 150 \text{ N}$$

The direction of force is 25 degrees N of E.

Answer. F = 150 N, the direction of force is 25 degrees N of E.