

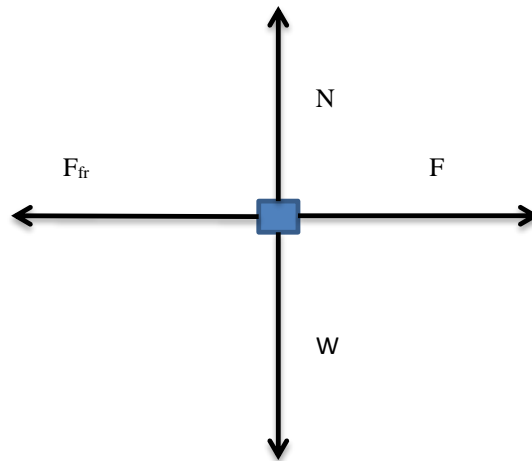
**Answer on Question#40150, Physics, Mechanics | Kinematics | Dynamics**

**Question:**

A horizontal force of only 5 N moves a cake of ice with constant speed across a floor ( $\mu=0.1$ ).

(a) What is the weight of the ice?

**Answer:**



Newton's first law of motion:

$$x: \quad F = F_{fr}$$

$$y: \quad N = W$$

Friction force equals  $F_{fr} = \mu N = \mu W$ ,  $\mu$  - coefficient of friction.

Therefore:

$$\mu W = F$$

$$W = \frac{F}{\mu} = \frac{5}{0.1} \text{ N} = 50 \text{ N}$$

Answer: 50 N