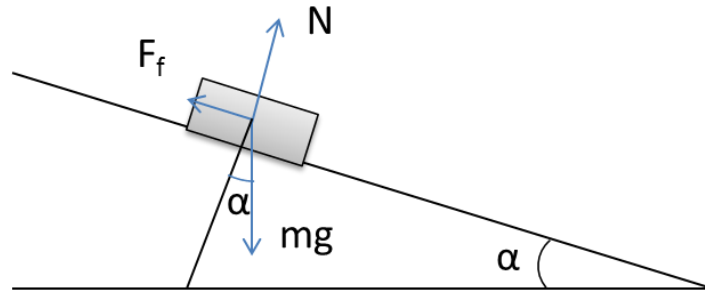


Answer on Question #48098, Physics, Mechanics | Kinematics | Dynamics

What is the μ of between a 520 kg wooden crate and the concrete ramp (15°) that it is sitting on?

Solution.



1st Newton's law:

$$\sum \vec{F} = 0$$

$$mg \cdot \cos \alpha = N$$

$$mg \cdot \sin \alpha = F_f$$

$$F_f = \mu N$$

So:

$$mg \cdot \sin \alpha = \mu mg \cdot \cos \alpha$$

$$\mu = \tan \alpha = \tan 15^\circ \approx 0.27$$

Answer: $\mu \approx 0.27$