

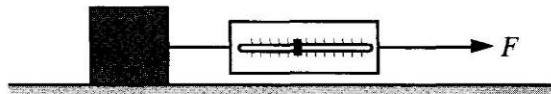
Friction Quiz 1

A box is given a sudden push up a ramp. Friction between the box and the ramp is not negligible. Which of the following diagrams best represents the directions of the actual forces acting on the box as it moves upward while being the pushed?

- (A)
- (B)
- (C)
- (D)
- (E)

In a lab, a block weighing 80 N is attached to a spring scale, and both are pulled to the right on a horizontal surface, as shown above. Friction between the block and the surface is negligible. What is the acceleration of the block when the scale reads 32 N?

- (A) 2.0 m/s²
- (B) 2.5 m/s²
- (C) 4.0 m/s²
- (D) 6.0 m/s²
- (E) 8.0 m/s²



A rope of negligible mass supports a block that weighs 30 N. The breaking strength of the rope is 50 N. The largest acceleration that can be given to the block by pulling up on it with the rope without breaking the rope is most nearly

- (A) 6 m/s² (B) 6.7 m/s² (C) 10 m/s² (D) 15 m/s² (E) 16.7 m/s²

A horizontal, uniform board of weight 125 N and length 4 m is supported by vertical chains at each end. A person weighing 500 N is sitting on the board. The tension in the right chain is 250 N.

What is the tension in the left chain?

- (A) 250 N (B) 375 N (C) 500 N
- (D) 625 N (E) 875 N