

Physics  
Net F = ma Practice

Name \_\_\_\_\_

Date \_\_\_\_\_

$F_g = ma_g$

net F = ma

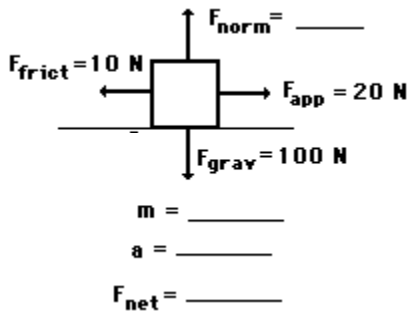
$v_f = v_i + at$

$x = v_i t + \frac{1}{2} at^2$

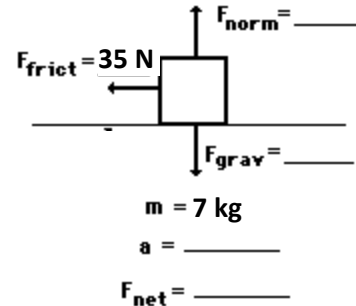
$v_f^2 = v_i^2 + 2ax$

$x = \frac{1}{2} (v_i + v_f)t$

1. An applied force of 20 N is used to accelerate an object to the right across a frictional surface. The object encounters 10 N of friction. Use the diagram to determine the normal force, the net force, the mass, and the acceleration of the object.



2. A 7-kg object is sliding to the right and encountering a friction force of 35 N which slows it down. Determine the force of gravity, the normal force, the net force, and the acceleration.



Academic Physics  
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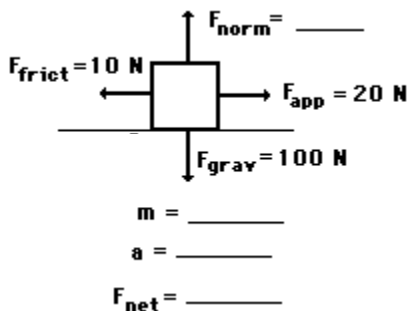
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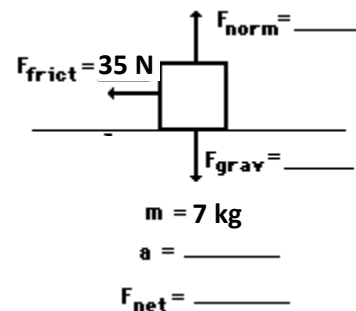
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2. 7-kg object is sliding to the right and encountering a friction force of 35 N which slows it down. Determine the force of gravity, the normal force, the net force, and the acceleration.



3.

On vacation, Jill tries water skiing for the first time and has a successful time standing up out of the water. She is being pulled by a motor boat with an acceleration of  $2.5 \text{ m/s}^2$  and experiences  $75 \text{ N}$  of friction from the surface of the water. The combined mass of Jill and her skis is  $50 \text{ kg}$ . What is the tension in the rope connecting her to the boat?

4.

A  $50\text{-kg}$  diver on the swim team does a back flip off the spring board and enters the water with a velocity of  $10 \text{ m/s}$ . After hitting the water the diver comes to rest  $10 \text{ m}$  below the surface. What is the average net force that the water exerts on the diver upon entry into the pool?

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