PHYSICS 11

NORMAL FORCE

(Practice Questions)

1. Determine the magnitude and direction of the normal force acting on a 15.0 kg object that rests on a horizontal frictionless surface while being acted upon by a force of push 45 N downwards. Include a labeled situation diagram.

2. Determine the normal force experienced by a 2.0 kg object that is being pulled upwards with force of 12.6 N while moving along a leveled surface at constant speed.

3. Determine the normal force experienced by 10.0 kg object that is being pulled upwards with force 120 N while sliding along a horizontal surface.

4. What is the acceleration of the object in question 3?

5. Determine the normal force experienced by a 10.0 kg object that is being pulled with force of 120 N 50° above horizontal while sliding along a horizontal surface.

6. What is the normal force experienced by an 8.5 kg object resting on a leveled surface with a coefficient of friction of 0.068 and acted upon by a force of tension of 45 N Up 10° Right?

7. What will be the normal force experienced by an 18 kg crate that is being pushed up an inclined plane with an angle of inclination of 32°?
   A) The pushing force of 230 N is parallel with the inclined plane.

   B) The pushing force of 230 N is up the inclined plane at an angle of 20° above the incline's surface.

8. Will a 5.6 kg object experience a normal force when it is placed on a horizontal surface? If yes, find the magnitude of the normal force. If not, explain why and justify your answer.
   A) While being pulled with F_1= 25 N [R40°U]?

   B) While being pulled with F_2= 13 N [L 60°U]?

   C) While being pulled with F_1 and F_2 simultaneously?

   D) What magnitude of F_1 would lift the object if the second force remained the same and the direction of F_1 was also the same? Justify your answer.