Physics 20

Inclined Planes

1. A 16.2 kg object is at rest on an inclined plane. If the inclined plane makes an angle with the horizontal of 25.0⁰, what is the normal force acting on the object?

2. A 15.0 N object is pulled up an inclined plane. If the angle of the inclined plane is 35.0⁰, and the coefficient of friction is 0.300, what is the force of friction?

3. A 445 N box is sliding down a frictionless 25.0⁰ inclined plane. Find the parallel component of the weight of the box?

4. A 325N box is sliding down a frictionless inclined plane. If the incline makes an angle of 30.0⁰, what is the acceleration along the incline?

5. A 275 N box is sliding down a 35.0⁰ incline. If the force of friction is 96.0 N, what is the acceleration of the box?

6. A 435 N box is sliding down a 40.0⁰ incline. If the acceleration of the box is 0.250 m/s2, what is the force of friction on the box?