Forces on Ramps

1) Determine the force of gravity, normal force and force down the ramp (Fnet) of a 10 kg mass on a $30°$ slope.

2) Determine the angle of a ramp if a mass of 5.0 kg has a net force of 44.4N.

3) What is the acceleration down a $45°$ ramp of a (a) 3.0 kg mass, (b) 5.0 kg mass?

Fnet using Vectors

1) Find the net force on an object if 10.0 N pulls it at $45°$ E of S and a 20.0 N force pulls it at $30°$ W of S.

2) Find the acceleration of a 15 kg mass if 30 N pulls it at $60°$ W of N and 50 N pulls it at $45°$ E of S.

Answers: 1) Fg = 98 N, Fn = 84.9 N, Fdown = 49 N,   2) 65°,   3) 6.93 m/s^2, 6.93 m/s^2
          1) Fnet = 24.5 N at 6.9° W of S,   2) 1.50 m/s2 at 65.4° S of E