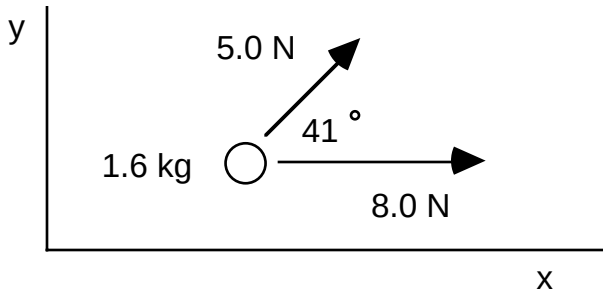
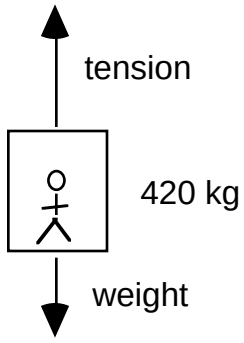
Dynamics : Test-40

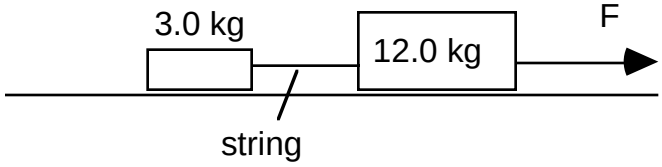
1) Two forces act on an object as shown. The object is seen from above. Find the acceleration. Express the answer as an ordered pair.



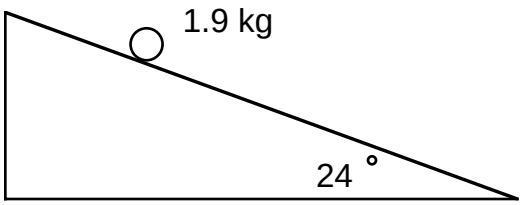
2) Find the tension in the cable, if the upward acceleration is 0.45 m/s^2.



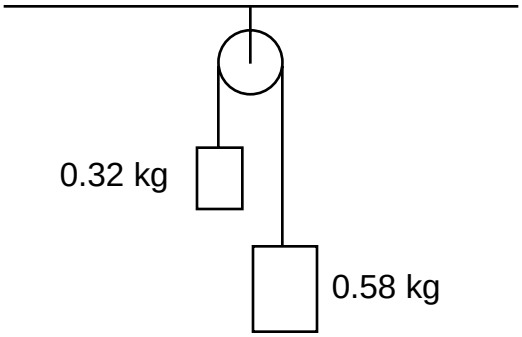
3) Two blocks are accelerated by a force F. The force F equals 7.5 N. Find the tension in the string. Find the net force on the 12 kg mass. Assume that friction is zero.



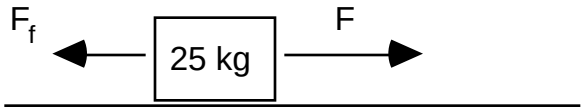
4) Find the net force on the ball, if the force of friction is 3.2 N.



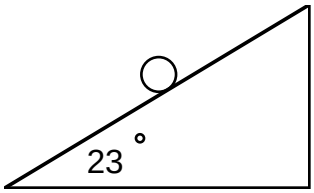
5) Find the acceleration of the system and the tension in the string.



6) The coefficient of friction (μ) is 0.35. If the acceleration is 1.2 m/s^2, find the force F.



7) Find the acceleration of the ball. The coefficient of friction is equal to 0.15.



Answers: 1) [7.4, 2.1] m/s^2, 2) 4300 N, 3) 1.5 N, 6.0 N, 4) 4.4 N [down incline], 5) a = 2.8 m/s^2, T = 4.0 N, 6) 116 N, 7) 2.5 m/s^2 [down incline].