Exercise

Newton's Law of Motion

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Determine the force required to accelerate

(a) a 1000-kg steel block at ½ g;

(b) a 200-g dragon fruit at the same rate.

(4905 N, 0.981 N)

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1) A resultant force of 29 N act in an easterly direction on a 75 kg mass. What is the resulting acceleration?

2) In an experiment aboard a space shuttle, an astronaut observes that a resultant force of only 12 N will give a steel box on an acceleration of 4 m/s^2. Calculate the mass of the box.
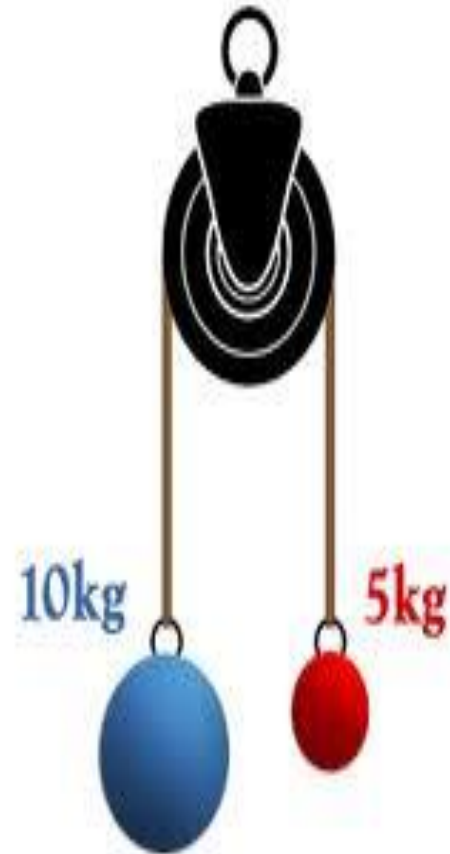
(0.387 m/s^2, 3 kg)

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A system of two solid iron suspended over a pulley by a flexible wire is sometimes referred to as an Atwood's Pulley. If mass one is 10.00 kg and mass two is 5.00 kg, determine the acceleration of each mass.

10kg   5kg

(3.27 m/s²)

A 3.70 x 10^3 kg elevator is being raised by a cable that exerts a 4.00 x 10^4 N force upwards. Determine the acceleration of the elevator.

(1.001 m/s^2)

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