

## Forces and Work : Quiz-45

1) Give definitions for the following terms.

- a) force
- b) net force
- c) mass
- d) gravity
- e) weight
- f) friction

2) An object has the following forces acting on it; + 4 N, - 8 N, + 2 N, - 11 N, and + 7 N. Find the Net Force.

3) If the net force on an object is zero, what is true of the speed of the object?

4) Write down three things that may happen to an object if the net force acting on it is NOT zero.

- a)
- b)
- c)

5)a) What is the acceleration due to gravity on the Earth?

b) If a car has a mass of 650 kg, what is its weight on the Earth?

c) If the car was transported to the moon, what would its weight be there?

6) The spring of a spring scale is extended 4.5 cm by a force of 18 N

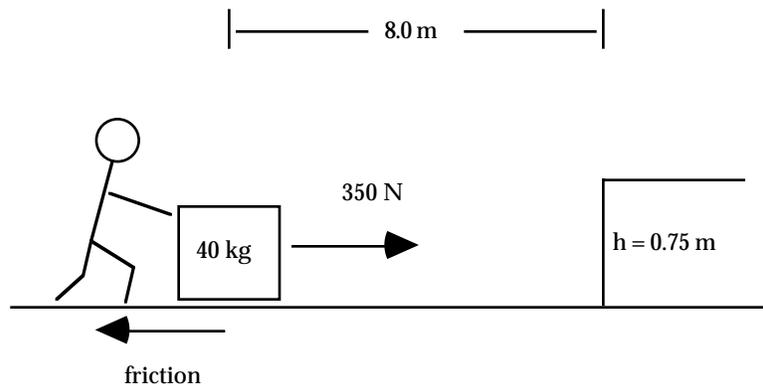
a) What would the extension be if the force was 36 N?

b) What would the extension be if the force was 24 N?

c) What force would cause an extension of 3.0 cm?

7) What is work?

8) A boy pushes a box at a constant speed with a force of 350 N. The distance the box is moved is 8.0 m. He then lifts the box onto a table which is 0.75 m high as shown below.



a) How much work is done in pushing the box horizontally 8.0 m?

b) How much work is done in lifting the box to a height of 0.75 m?

Answers: 1)a) A force is a push or a pull., b) The net force is the sum of all forces acting on a body., c) The mass of an object is the quantity of matter in the object., d) Gravity is the force of attraction between any two bodies., e) Weight is the force of gravity acting on an object., f) Friction is a force that opposes motion., 2) -6 N (6 N left), 3) The speed is zero or constant., 4)a) Its speed may change., b) Its direction of motion may change., c) Its shape may change., 5)a)  $9.8 \text{ m/s}^2$  [down], b) 6370 N, c) 1040 N, 6)a) 9.0 cm, b) 6.0 cm, c) 12 N, 7) Work equals the force acting on an object multiplied by the distance it is moved., 8)a) 2800 J, b) 294 J.