

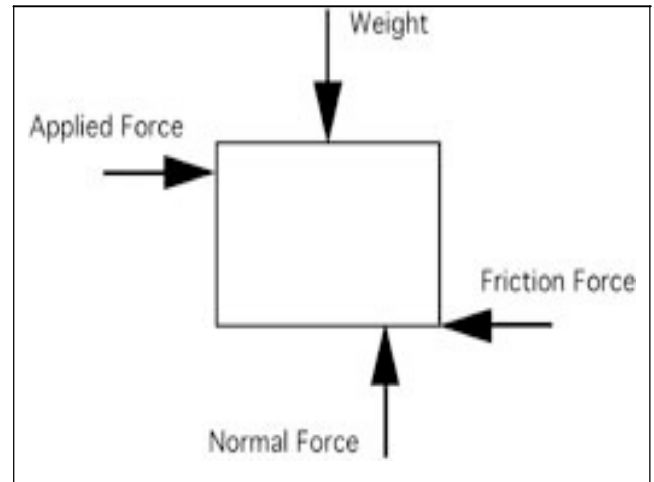
Name _____

Newton's 1st Law Practice Problems

63 $w = mg$ $g = 9.8\text{m/s}^2$

1) What is the weight of a 3 kg object?

2) What is the weight of a 20 kg object?



3) What is the mass of a 4 N object?

4) What is the mass of a 125 N object?

5) What is the weight of a 4 kg object on a planet where $g=12.5\text{ m/s}^2$?

6) What is the weight of a 50 kg object on a planet where $g=7.5\text{ m/s}^2$?

7) What is the acceleration due to gravity on a planet where a 5 kg object has a weight of 85 N?

- 8) What is the acceleration due to gravity on a planet where a 7.5 kg object has a weight of 60 N?
- 9) What is the normal force acting on a 5 kg object sitting at rest on a table?
- 10) What is the normal force acting on a 18 kg object sitting at rest on a table?
- 11) A bicyclist supplies 100 N worth of force as a 20 N force of wind works against their motion. What is the net force acting on the bicycle?
- 12) A bicyclist supplies 100 N worth of force as a 20 N force of wind pushes them along. What is the net force acting on the bicycle?
- 13) A 150 N force is applied to an object. A force of friction of 120 N works against the applied force. What is the net force acting the object?
- 14) A 65 N force of friction acts on a box which is being pushed across the floor. A 250 N force is applied to the object. What is the net force acting on the box?

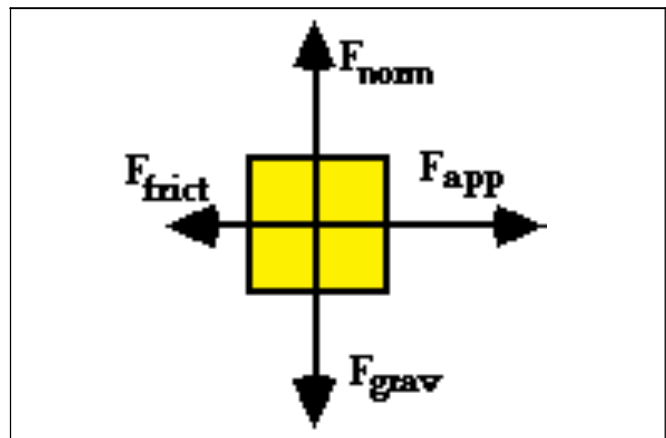
15) An 80 N force is applied to pull an object across the floor. The net force was 15 N. What was the force of friction?

16) A 15000 N force is applied to a car. The net force was 12000 N. What was the force of friction?

17) A 25 N force of friction acts against a sled being pulled on the snow. The net force was 70 N. What was the applied force?

18) A 70 N force of friction acts against an object being pushed across the floor. The net force was 32 N. What was the applied force?

19) What is the weight of a 30 kg object?



20) What is the mass of a 2500 N object?

Answers

1) 29.4 N 2) 196 N 3) .41 kg 4) 12.8 kg 5) 50 N 6) 375 N 7) 17 m/s^2 8) 8 m/s^2 9) 49 N
10) 176.4 N 11) 80 N 12) 120 N 13) 30 N 14) 185 N 15) 65 N 16) 3000 N 17) 95 N 18) 102 N
19) 294 N 20) 255 kg