

Name _____
Physics Section 4.3 Newton's 2nd Law

Newton's 2nd Law Practice Problems

The direction of the net force is in the same direction as the acceleration. Thus, if the direction of the acceleration is known, then the direction of the net force is also known. Consider the two [ticker tape traces](#) below for an acceleration of a car. From the trace, determine the direction of the net force which is acting upon the car. Provide an explanation for your answer.



The net force is _____



The net force is _____

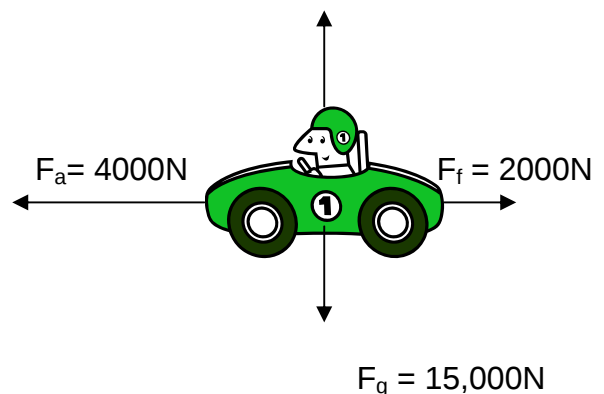
1. What acceleration will result when a 12-N net force applied to a 3-kg object? A 6-kg object?

2. A net force of 16 N causes a mass to accelerate at a rate of 5 m/s^2 . Determine the mass.

3. A car is moving as shown.

a) Find the

b) Net force



b) is the car accelerating? If so, determine the acceleration.

4. A rightward force is applied to a 6-kg object to move it across a rough surface at constant velocity. The object encounters 15 N of frictional force. Draw a free-body diagram and determine the gravitational force, normal force, net force, and applied force. (Neglect air resistance.)

5. A rightward force of 25 N is applied to a 4-kg object to move it across a rough surface with a rightward acceleration of 2.5 m/s^2 . Draw a free-body diagram and determine the gravitational force, normal force, frictional force and net force. (Neglect air resistance.)