$$F_{net} = ma \qquad\qquad f = \mu N$$

1. Give two examples, one for each part, of something during your day that demonstrates Newton's First Law.

2. A car going 27 m/s slams on the brakes to stop from hitting a cow. The driver manages, but only just. If the tire marks on the pavement stretch for 20 m and the mass of the car and driver is 1700 kg, what was the magnitude of the force applied to the car by the brakes?

3. A spaceship with a mass of 4,000 kg is flying through a cloud of space dust (ice, rocks, gases…). The engines exert 40,000 N of thrust but the acceleration of the ship is 8.2 m/s$^2$. Find the drag force that the space dust is exerting on the ship.

4. A block is at rest on an incline plane. The plane is inclined at an angle of 15$^o$. Find the coefficient of static friction.

5. A block is sitting on an incline that makes an angle of 35° with the horizontal. If the object is being held in place due to friction, find the magnitude of the static friction force. The mass of the object is 52 kg.

6. A sled is being dragged across the ground as shown below. If the mass of the sled is 15 kg, what is the normal force acting on the sled?