

## 4.1 Review Questions

1. A 1000 Kg car accelerates at a rate of 3 m/s/s. What force is being applied by the engines?
2. A car is being pushed with a force of 400 N. It went from a stop to a speed of 5 m/s in a time of 10 s. What is the mass of the car?
3. A person is walking with a velocity of 0.5 m/s. She then speeds up to a velocity of 4.0 m/s in a time of 5.0 s.
  - a. What is her acceleration?
  - b. If her mass is 60 kg, what force did she have to apply?
4. A car can accelerate at 5 m/s/s at its most powerful. If it has to tow a car of equal mass, what is its highest possible acceleration?
5. A 1500 Kg car is accelerating at a rate of 1.25 m/s/s. With what force must the engine be pushing the car?
6. A force of 800 N is applied to a 350 Kg object. What is the object's acceleration? What would the acceleration be if the object were twice the mass?
7. A person is walking 1.0 m/s. He accelerates to a velocity of 4.5 m/s in 2.0 s. If his mass is 70 Kg, what force did he have to apply to change his motion?
8. A person is pushing a car down a horizontal street. If she is applying 400 N of force to the car and it is going at a constant speed, tell me about the frictional forces on the car.
9. What is the acceleration of an 85 Kg person if a force of 150 N is applied to him?