To cause a 25 kg object to experience an acceleration of 2 m/s2 the net force that needs to be applied to the object is

A) 10 N  
B) 5 N  
C) 50 N  
D) 100 N

A gymnast jumps upward with an initial speed of 10 m/s. She is in the air for a total time of

A) 1 second  
B) 5 seconds  
C) 2 seconds  
D) 10 seconds

When your car slides on an icy road, it is very hard to control because

A) The bumps in the road are magnified due to sliding  
B) Air resistance is the only force acting on the car  
C) Static friction is weaker than sliding friction  
D) Sliding friction is weaker than static friction

Suppose you are driving your car down the highway and speeding up. Which of the following are true?

A) The car’s momentum is constant but not its kinetic energy  
B) The car’s kinetic energy is constant but not its momentum  
C) Both the car’s kinetic energy and momentum are constant  
D) Neither the car’s kinetic energy nor momentum are constant

Bolts work because they act like very strong springs and extend slightly when they are tightened. Suppose a steel bolt has spring constant 1.8x108 N/m. How far would it have to stretch in order to provide a force 2000N?

A) 1.8x10-3 m  
B) 1.8x10-8 m  
C) 1.11 m  
D) 1.11x10-5 m