

Forces and Motion Quiz 3

1. Acceleration is

- A. inversely proportional to the applied force.
- B. proportional to the mass of an object.
- C. inversely proportional to the mass of an object.
- D. equal to the applied force times the mass of an object.

2. A go-cart with a mass of 47.0 kg is accelerating at a rate of 4.50 m/s^2 . What net external force is being applied to the go-cart?

- A. 102 N
- B. 212 N
- C. 10.4 N
- D. 2070 N

3. What net force in newtons is required to accelerate a car with a mass of 2500 kg at a rate of 2.0 m/s^2 ?

- A. 1250 N
- B. 10 000 N
- C. 0.0008 N
- D. 5000 N

4. A net external force of 14 N is applied to a ball with a mass of 7.3 kg. The acceleration of the ball is _____ in the direction of the net force.

- A. 1.9 m/s^2
- B. 0.52 m/s^2
- C. 5.1 m/s^2
- D. 18.8 m/s^2

5. When a grasshopper leaps from a rock, the force of the grasshopper pushing against the rock is equal and opposite to the force of

- A. air resistance on the grasshopper.
- B. Earth's gravity on the grasshopper.
- C. the rock pushing against the grasshopper.
- D. the rock pushing against the air.

6. Which of the following correctly identifies the action-reaction pair of forces that allows a propeller to move a boat through water?

- A. the force of the water against the propeller and the force of the propeller against the water
- B. the force of the propeller against the water and the force of friction between the propeller and the water
- C. the force of friction between the propeller and the water and the force of friction between the water and the boat
- D. the force of the water against the propeller and the force of friction between the water and the boat

7. An action-reaction pair of forces acting on a pair of objects does not result in a state of equilibrium because the forces

- A. act in opposite directions.
- B. affect each object in different ways.
- C. have different magnitudes.
- D. occur at different times.

8 and 9 will be worked out a separate sheet of paper stapled to your quiz. Find a seat.