

- ① What would happen to 'electrical force' if the distance between two charges tripled?
- ② If the velocity of a 10 kg mass increases yet its mass stays the same, what happens to its momentum?
- ③ How is momentum related to impulse?  
Write the equations for both impulse and momentum.
- ④ a) Two objects collide. The first object has twice the mass of the second. The second object has twice the velocity as the first. The objects stick together after the collision. After the collision, the velocity of the new object is:
- ⑤ A ball attached to a string of length " $l$ " is swung in a horizontal circular path. The ball makes 2 revolutions each second. Given that the frequency remains constant,
  - a.) what happens to  $F_c$  if " $l$ " is tripled?
  - b.) What happens to velocity of the ball if " $l$ " is tripled?

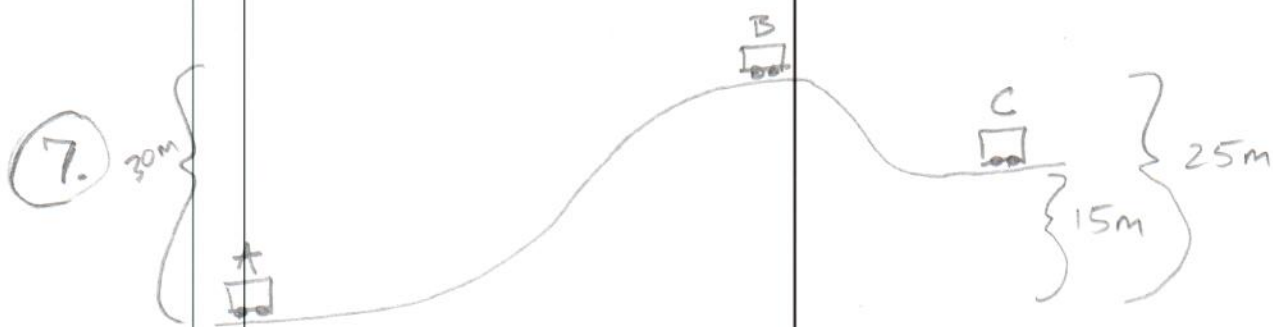
(6) A tennis ball of mass 200 grams is traveling at a player's racket with a speed of 50 m/s.

The player hits the ball directly back the opposite direction with a speed of 60 m/s.

The player's racket is in contact with the ball for .008 seconds.

a.) What is the change of momentum of the ball?

b.) What is the average force exerted on the ball while in contact with the racket?



The cart has mass 50 kg and is traveling at 100 m/s at point A. Assume no friction.

a.) What is the cart's velocity at point B?

b.) What is the cart's velocity at point C?