

Question 1

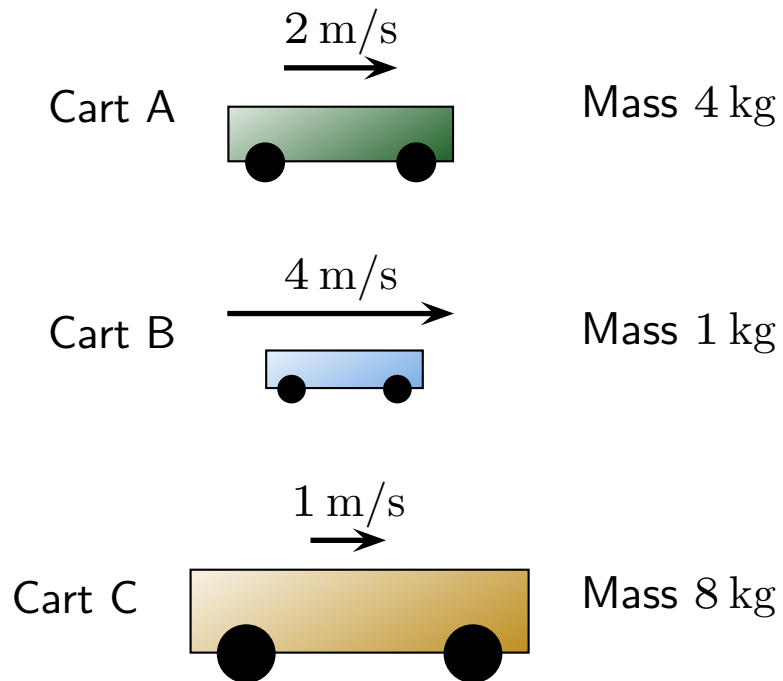
Consider the skater sliding on the track in the PhET animation.

As the skater descends, which of the following is true?

1. KE increases, PE increases.
2. KE decreases, PE increases.
3. KE decreases, PE decreases.
4. KE increases, PE decreases.
5. KE constant, PE decreases.
6. KE increases, PE constant.

Question 2

Three carts have different masses and travel with different speeds.



How do the kinetic energies compare?

1. A and B are the same and smaller than C.
2. A and B are the same and larger than C.
3. B is largest, A medium and C smallest.
4. A is largest, B medium and C smallest.
5. C is largest, A medium and B smallest.

Question 3

A skater is at rest at the top of a track which is about 5 m above the ground. The skater's potential energy at this point is 3000 J. The skater drops down the track, eventually reaching the ground.

Which of the following is true when the skater reaches the ground?

1. $KE = 0 \text{ J}$ and $PE = 3000 \text{ J}$
2. $KE = 3000 \text{ J}$ and $PE = 0 \text{ J}$
3. $KE = 3000 \text{ J}$ and $PE = 3000 \text{ J}$
4. $KE = 1500 \text{ J}$ and $PE = 1500 \text{ J}$
5. $KE = 1500 \text{ J}$ and $PE = 0 \text{ J}$
6. $KE = 0 \text{ J}$ and $PE = 0 \text{ J}$