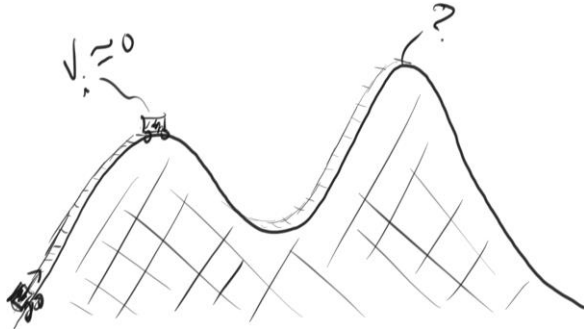


Physics 10 Quiz Set 6 on energy:

1. When a rifle with a longer barrel is fired, the force of expanding gases acts on the bullet for a longer distance. What effect does this have on the velocity of the emerging bullet? Your answer should be in terms of energy thinking.
2. A person is selling a “superball” claiming that it will bounce to a greater height than from which it was dropped. Comment.
3. Discuss the design of the roller coaster as shown in the diagram in terms of energy thinking.



4. Can something have energy without having momentum? Can something have momentum without having energy?
5. When the velocity of an object is doubled, by what factor is its momentum changed? By what factor is its kinetic energy changed?
6. If your momentum is zero, is your kinetic energy necessarily zero also?
7. Two lumps of clay with equal and opposite momenta have a head-on collision and come to rest. Is momentum conserved? Is kinetic energy conserved?