The Comet #3

This page considers the 1st switch back. This page also assumes that the track distance from the 1st hill's top to the 1st camelback's apex is the same as the track distance from the 1st camelback's apex and the 1st switchback (hence the total energy lost between the 1st hill's top and the 1st switchback is twice the energy lost between the 1st hill's top and the 1st camelback's apex).

1. What is the vertical difference between the 1st hill's top and the 1st switchback?

2. What should the train's kinetic energy be if the track were friction free?

3. What is the train's kinetic energy after accounting for energy losses due to the track?

4. What is your speed at the switchback?

5. Given that the diameter of curvature of the switchback is 16.46 m, what is the centripetal force applied to the train by the track?

6. How many G's do you pull in the switchback?