Tremors

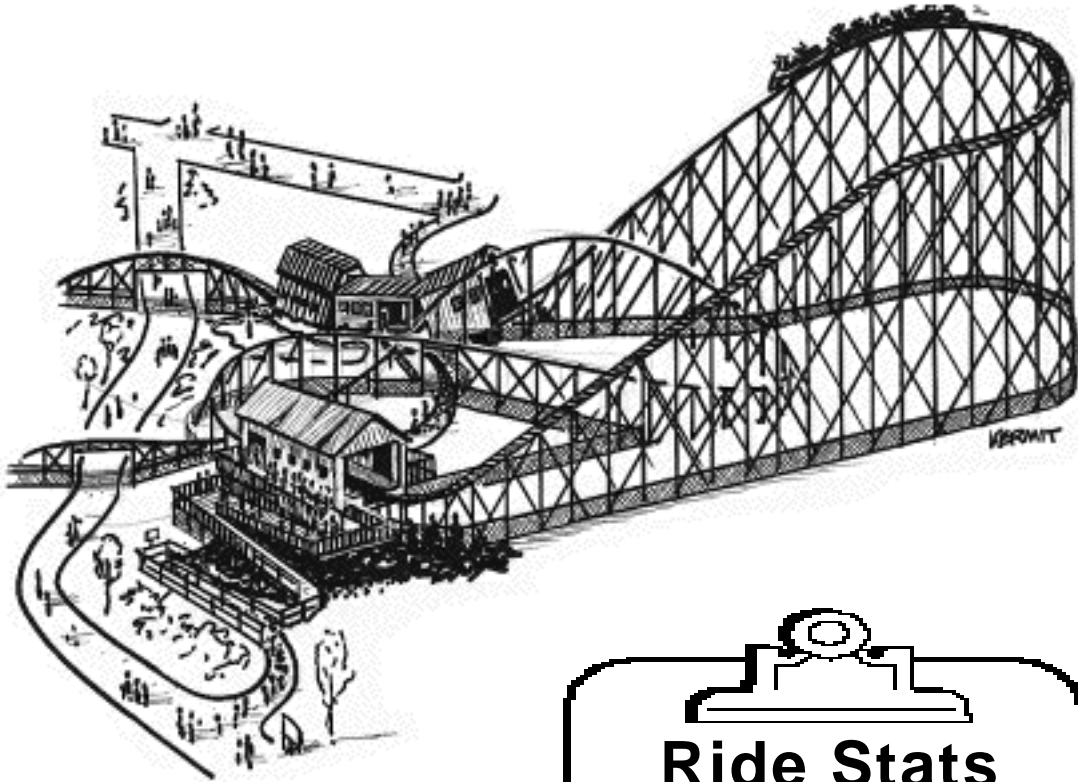## Ride Stats

Lift Hill Height: 26.4 m
Drop Hill Height: 31.2 m
Length of ride: 909 m

Length of train: 12.0 m
Mass of train: 5200 kg

Measurements:

Time to climb lift hill:⎯⎯⎯⎯⎯⎯⎯⎯⎯
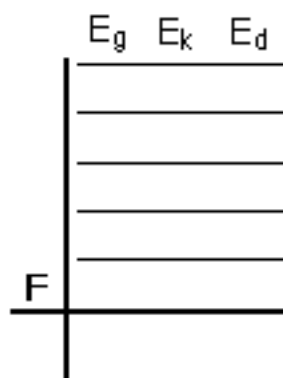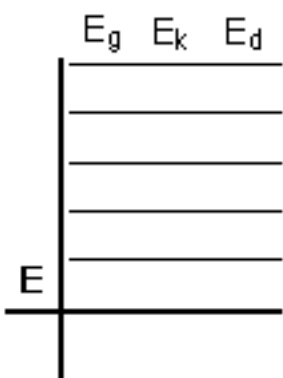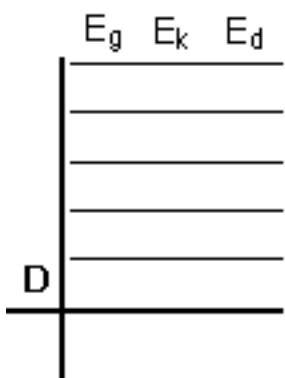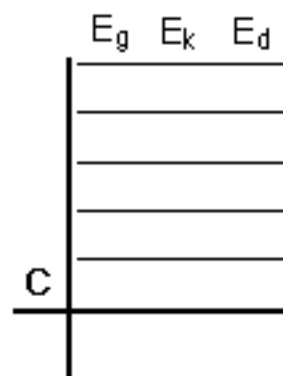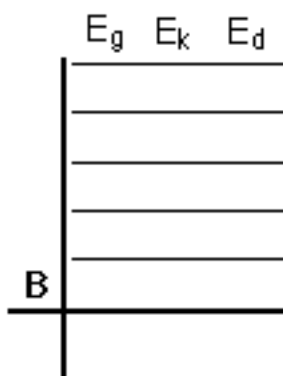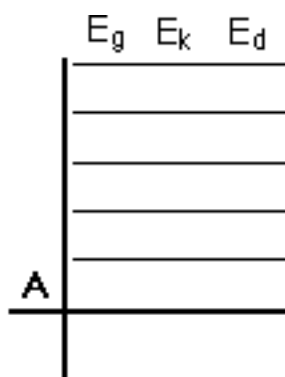
Maximum Acceleration (g's):⎯⎯⎯⎯⎯⎯⎯⎯

Speed of train just before the stopping brakes are applied:⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

<u>Task 1:</u>

Determine the power necessary to lift a fully loaded train from the loading station to the highest point. Show your work.

<u>Task 2:</u>

Applying conservation of energy principles, construct energy bar graphs showing the relative amount and form of energy for a train at the following points: A: before leaving the loading platform; B: halfway up the lift hill; C: at the top of the lift hill; D: at the bottom of the first tunnel; E: at the point where 75% of gravitational potential energy at point "C" has been dissipated; F: after stopping back at the loading platform. Assume that a train at the loading platform has zero gravitational potential energy. <u>Account for all of the energy that the train has or had at each point.</u>

E_g E_k E_d

A

E_g E_k E_d

B

E_g E_k E_d

C

E_g E_k E_d

D

E_g E_k E_d

E

E_g E_k E_d

F

E_g = gravitational potential energy, E_k = kinetic energy,
E_d = dissipated energy, as by friction.