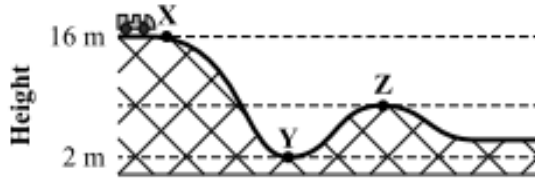


O.R. #11 ENERGY & MOMENTUM

The diagram below shows three points on a roller coaster track. A car starts from rest at point **X** and travels along the track. Assume friction is negligible.



- Identify whether the car's gravitational potential energy increases, decreases, or stays the same as the car moves from point **X** to point **Y**.
- Identify whether the car's kinetic energy increases, decreases, or stays the same as the car moves from point **Y** to point **Z**.

The car has a mass of 600 kg.

- Calculate the gravitational potential energy of the car at its maximum height. Show your calculations and include units in your answer.
- Calculate the maximum kinetic energy of the car. Show your calculations and include units in your answer.

