

Ch. 6 / Conceptual Questions

- ③ For winding roads, the angle of inclination is less than the roads going straight up. This means less force is required to ~~go~~ go up the road. of course, the length of the road increases, so the amount of required work (force $\times$ distance) remains the same, or even increases if friction is taken into account.
-

⑤

Yes; imagine a book on a conveyor belt carried upward. The book is at rest relative to the belt. The ^{static} friction force is upward and produces the same amount of work against the force of gravity that tends to pull the book downward.

⑥ At the top of the first hill, the roller coaster's energy is mostly potential energy. As it rolls down the track, some ^{of} the PE is transferred to KE and therefore the other hills cannot be higher than the first hill (by the law of conservation of energy).

⑧ At the top, most of the energy is in the form of PE and little KE. At the bottom, PE is small and most of the energy appears as KE (higher speeds).
