

Energy

In the following cases, analyse the transformations of energy in terms of conservation of energy.

1. The motion of a car on a roller coaster.
2. The motion of the bungee jumper.
3. Car A accelerates from a stoplight until it reaches the posted speed limit of 30 km/h. At the intersection, a pickup truck “runs” the stop sign. The driver of Car A applies the brakes and in an attempt to avoid the collision leaves skid marks on the road. A loud crash is heard as the car impacts the side panel of the truck.
4. A pole vaulter.
5. A child on a pogo stick.
6. Two cars with spring-loaded bumpers collide at a low speed and bounce off each other. Describe the collision in terms of the energy transformations that occur for the cars. What about the occupants of the cars?