

4. An 82 kg hiker climbs Mt. Humphrey near Flagstaff, AZ. During a two-hour period, the hiker's vertical elevation increases by 540 meters.
 - a. Calculate the climber's ΔU_g .
 - b. Find the power generated to increase the hiker's U_g .

5. How long would it take a 7.5 KW motor to raise a 500 kg piano to an apartment window 10 meters above the ground?

6. The trains on a roller coaster are raised from 10 m above ground at the loading platform to a height of 60 m at the top of the first hill in 45 s. Assume that the train (including passengers) has a mass of 2500 kg. Ignoring frictional losses, what power motor would be required to accomplish this task?

7. Your electric utility company sends you a monthly bill informing you of the number of kilowatt•hours you have used that month.
 - a. Is the utility charging you for energy or power? Explain.

 - b. How many joules does your 1600W blow drier transfer if you dry your hair in 5.0 min?