

Up and Down Lab

In today's lab I will be experimenting by calculating work and power done by myself and gravity. To do this I will go to a hill on my bike, bike up the hill, then bike down it. I will then determine the amount of work for gravity to carry me up and down the hill by does anyone know how to turn microsoft word in on canvas dividing the "work" it took me by the time it took to get up or down the hill. The goal is to determine the power that gravity used to take me up and down the hill.

To perform the lab:

1. My friend charley and I rode our bikes to 1 Iron Springs Road which was at the altitude of 51 meters.
2. I had Charley go to the top of the road (9 Iron Springs Rd which is the altitude of 59 meters) * and time me biking up. It took me 19.96 seconds to bike up to it on second gear.
3. She then went to the bottom and timed me going down. It took me 11.40 seconds to ride down the hill on fifth gear (with breaks).
4. Later that evening I did the calculations:

Up the Hill:

Power Output = force (weight)/time

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Power Output = 51.7kg/19.96sec

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Power Output = 2.59 kg/s

Down the Hill:

Power Output = force (weight)/time

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Power Output = 51.7kg/11.40sec

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Power Output = 4.535 kg/s

Work = force x distance

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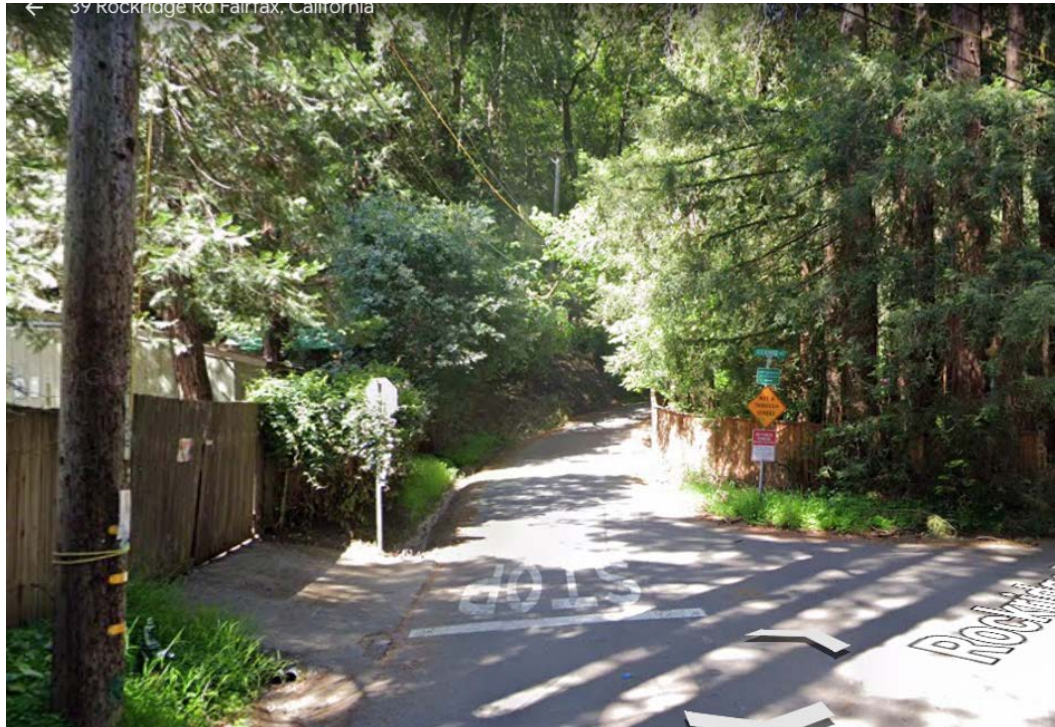
Work = 51.7kg x 89m

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Work = 4,601.3 m kg

*I now realize that you (Clark) envisioned us going on long bike rides/hills, however at the time of the experiment I was under the impression that it was supposed to be a quick ride.

Start:



End:

