Energy practice problems:

1. A brick is dropped from a height of 29 m. When it is moving 15 m/s, what is its altitude? $h_f = 17.5\,m$

2. A roller coaster is moving 20 m/s and goes up a 40° hill. How far up <u>along</u> the hill does it go? $d = 31.7\,m$

3. A block moving on a frictionless floor at 15 m/s hits an area where the coefficient of kinetic is 0.35 and slides to a stop. How far did it move while sliding? $d = 32.8m$

4. A block slides down a 35° hill whose coefficient of kinetic friction is 0.25. The hill is 10 m high. What is its final speed? $V_f = 11.2\,\frac{m}{s}$

5. A 0.35 kg block moving 2m across a frictionless floor at 4 m/s hits a spring with a spring constant of 275 N/m. How far is the spring compressed? $\Delta X = 0,143\,m$

6. A 5 kg mass sliding at $v_i = 12$ m/s on level ground goes up a hill. (a) What is its speed (v_1) when it is $h_1 = 3$ m above ground? (EC) It goes over the hill. What is its height (h_2) when it is going $v_2 = 10$ m/s? $V_1 = 9.23\,\frac{m}{s}$ $h_1 = 2.24\,m$