

## Chapter 8 Worksheet Part 2

1. A 3500. kg pile driver moves through a vertical distance of 7.50 m and hits the ground and the stake with a force of  $5.00 \times 10^6$  N. How far into the ground does it drive the stake that it hits?
2. The coyote, whose mass is 20.0 kg is chasing the roadrunner when the coyote accidentally runs off the edge of a cliff and plummets to the ground 35.0 m below. What force does the ground exert on the coyote as he makes a 0.420 m deep coyote shaped dent in the ground?
3. A 350.0 kg cart rolls at the top of a 50.0 m tall hill, with a speed of 7.50 m/s. How fast will it be going when it gets to the top of the next hill, which is 30.0 m tall?
4. A sledder starts from rest atop a 5.00 m high hill. She sleds to the bottom and up to the top of the adjacent 3.00 m high hill. How fast is the sledder going at the top of the 3.00 m hill?
5. A bowling ball with a mass of 6.36 kg is dropped on Ms. Harper's car. If the bowling ball applies a force of 3350 N to the car causing a dent that is 41.0 cm deep, how high was the ball dropped from?
6. A 500. kg pig is standing at the top of a muddy hill on a rainy day. The hill is 100.0 m long with a vertical drop of 30.0 m. The pig slips and begins to slide down the hill. What is the pig's velocity at the bottom of the hill?
7. In 1989, Michrel Menin of France walked on a tightrope suspended under a balloon nearly at an altitude of 3150 m above the ground. Suppose a coin falls from Menin's pocket during his walk. How high above the ground is the coin when its speed is 60.0 m/s?