

7. The CN Tower in Toronto, Canada, is 553 m tall, making it the tallest free-standing structure in the world. Suppose a chunk of ice with a mass of 25.0 g falls from the top of the tower. The speed of the ice is 30.0 m/s as it passes the restaurant in the tower located 353 m above the ground. What is the average force due to air resistance?
8. In 1979, Dr. Hans Liebold of Germany drove a race car 12.6 km with an average speed of 404 km/h. Suppose Dr. Liebold applied the brakes to reduce his speed. What was the car's final speed if 3.00 MJ of work was done by the brakes? Assume the mass of the car and driver to be 8.00×10^2 kg.
9. The summit of Mount Everest is 8848.0 m above sea level, making it the highest summit on Earth. In 1953, Edmund Hillary became the first person to reach the summit. Suppose that upon arriving at the summit, Hillary slid a rock with a mass of 4.50 kg down the side of the mountain. If the rock's speed was 23.0 m/s when it was 8806.0 m above sea level, how much work was done on the rock by friction?

10. In 1990, Roger Hickey of California reached a speed of 35.0 m/s on his skateboard. Suppose it took 26 kJ of work for Hickey to reach this speed from a speed of 25.0 m/s. Friction resisted the motion with 5kJ of work. Calculate Hickey's mass.
11. The largest watermelon ever grown had a mass of 118 kg. Suppose this watermelon is exhibited on a platform 5 m above the ground. After the exhibition, the watermelon is allowed to slide to the ground along a smooth (frictionless) ramp.
- How high above the ground is the watermelon at the moment its kinetic energy is 4.61 kJ?
 - How fast is the watermelon going when it reaches the bottom of the ramp?
 - If the watermelon slides for 6 m on the (not-so-frictionless)ground after it reaches the bottom of the ramp, what is the coefficient of friction between the ground and the melon?