Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_Period:\_\_\_\_\_\_\_\_\_\_

Ch 5.3 - Page 172 - Practice Problems D - Potential Energy

1. A spring with a force constant of 5.2 N/m has a relaxed length of 2.45 m. When a mass is attached to the end of the spring and allowed to come to rest, the vertical length of the spring is 3.57 m. Calculate the elastic potential energy stored in the spring.
2. The staples inside a stapler are kept in place by a spring with a relaxed length of 0.115 m. If the spring constant is 51 N/m, how much elastic potential energy is stored in the spring when it length is 0.150 m?
3. A 40.0 kg child is in a swing that is attached to ropes 2.00 m long. Find the gravitational potential energy associated with the child relative to the child’s lowest position under the following conditions:
4. When the ropes are horizontal
5. When the ropes makes a 30.0° angle with the vertical
6. At the bottom of the circular arc