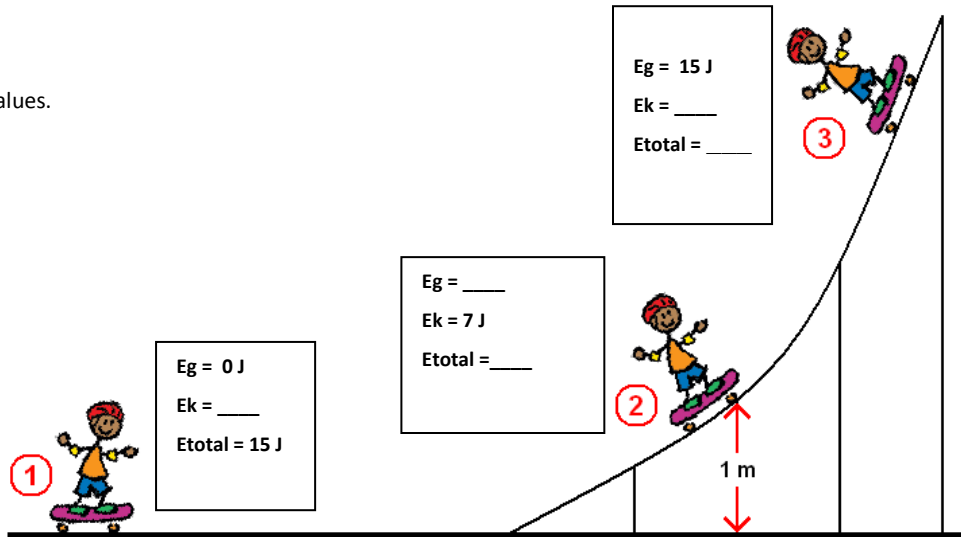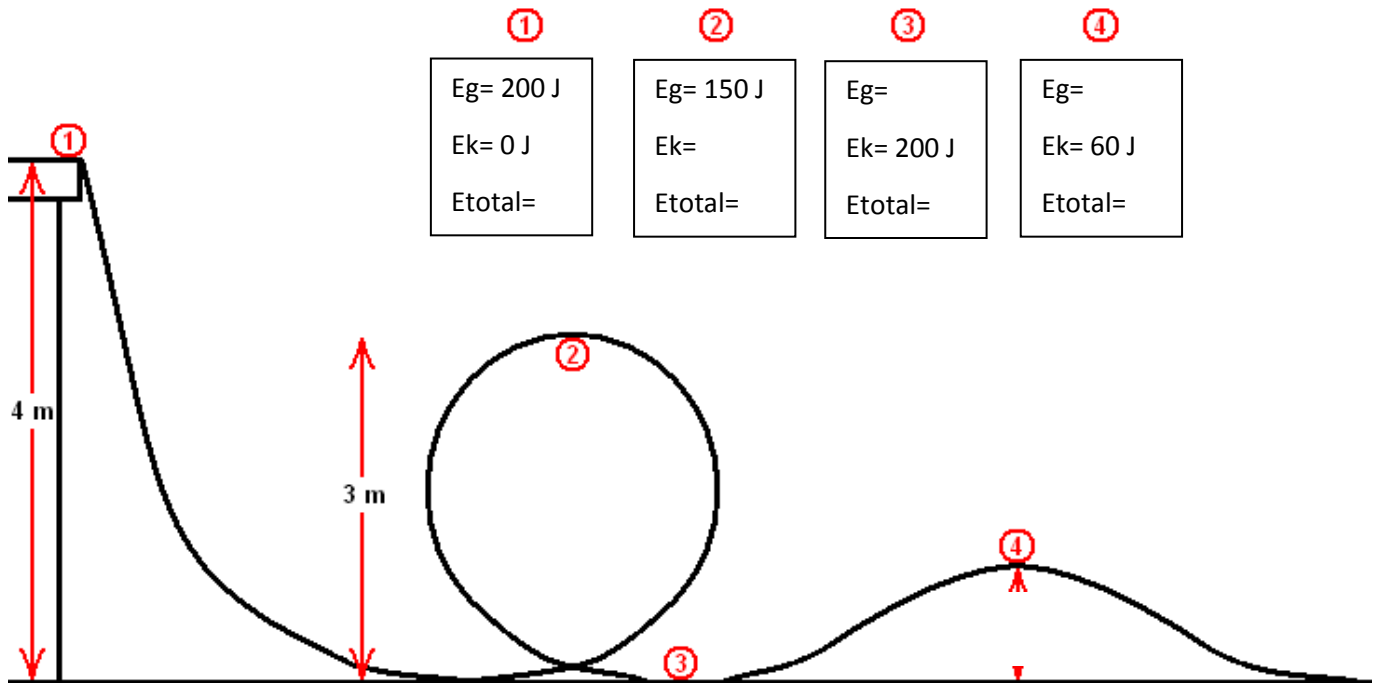Name _____ Date _____ Class _____

CONSERVATION OF ENERGY WORKSHEET [Unless otherwise stated , assume there is no air resistance and that all surfaces are frictionless]

1. Fill in the missing values.

Eg = 15 J
Ek = _____
Etotal = _____
③

Eg = _____
Ek = 7 J
Etotal =_____
②

Eg = 0 J
Ek = _____
Etotal = 15 J
①

1 m

2. Fill in the missing values.

①	②	③	④
Eg= 200 J	Eg= 150 J	Eg=	Eg=
Ek= 0 J	Ek=	Ek= 200 J	Ek= 60 J
Etotal=	Etotal=	Etotal=	Etotal=

①

4 m

3 m

②

③

④

3. An electric motor is used to hoist building supplies from the ground to the roof of a buidling.

A. How much work can the motor do in 12 seconds if its power output is 1.5 kW (1,500 W)?

B. How high can it lift a 131 kg bundle of shingles in that time?

4. A 1.8 kg book has been dropped from the top of the football stadium. Its speed is 4.8 m/s when it is 2.9 meters above the ground.
    A. What is its total mechanical energy? (mechanical energy includes kinetic, gravitational potential, and elastic potential but not internal forms of energy such as thermal or chemical)
    B. What was the total mechanical energy of the book at the instant it was released?
    C. How high is the stadium?

5. A 28 kg child on a swing is traveling at 4.2 m/s and has 315 J of total mechanical energy. What is his gravitational potential energy? How high is he above the ground?

6. A 3.2 kg ball that is moving straight upward has 17 J of kinetic energy and its total mechanical energy is 25 J.
    a. Find the gravitational potential energy of the ball.

    b. What is its height above the ground?

    c. What is the speed of the ball?

    d. What will be its gravitational energy when it is at its highest point above the ground?

    e. What is its maximum height above the ground?

    f. What will be its speed just before it lands on the ground?