NAME _____   MECHANICAL ENERGY

PT PHYSICS   Period ____   Date _____   Energy Worksheet #2

ELASTIC POTENTIAL ENERGY: Formula_____

1. A spring is stretched 0.2 m from equilibrium. The force constant (k) of the spring is 2500 N/m. What is the potential energy of the spring?

Givens:	Formula:	Answer:
Unknown:		

2. An archer uses 2000 J of energy to pull a bow string 0.15 m. What is the force constant (k) of the bow string?

Givens:	Formula:	Answer:
Unknown:		

3. A spring is compressed 0.035 m inside a dart gun. What is the potential energy of the spring? (k = 500 N/m)

Givens:	Formula:	Answer:
Unknown:		

4. A compressed spring has 20,000 J of stored energy. If the spring constant (k) is 1500 N/m, how far is the spring compressed?

Givens:	Formula:	Answer:
Unknown:		

CONSERVATION OF ENERGY:

5. A 75 kg skier is standing at the top of a 25 m hill. What would his speed be at the bottom of the hill?

Givens:	Formula:	Answer:
	Work:	
Unknown:		

6. A 5 kg ball is dropped from a height of 3 m onto a vertical spring, which has a force constant of 800 N/m. How much will the spring compress?

Givens:	Formula:	Answer:
	Work:	
Unknown:		

7. A 120 kg skier is going 50 m/s at the bottom of the hill. What is the height of the hill?

Givens:	Formula:	Answer:
	Work:	
Unknown:		

8. A vertical spring with a spring constant of 900 N/m has been compressed 0.8 m. The vertical spring is then used to launch a 2 kg ball straight up into the air. How high will the ball go?

Givens:	Formula:	Answer:
	Work:	
Unknown:		