Period of a Spring and Period of a Pendulum Formulas

$$T_s = 2\pi\sqrt{\frac{m}{k}}$$

$$T_p = 2\pi\sqrt{\frac{l}{g}}$$

$$T = \frac{1}{f}$$

Symbol	Quantity	SI Unit
T	period	Seconds
f	frequency	Hertz (1/s)
T_s	Period of a spring	Seconds
T_p	Period of a pendulum	seconds
m	mass	kilograms
k	Spring constant	Newtons per meter
l	Length of pendulum	meters
g	Free-fall acceleration (or gravitational field)	m/s^2

(unless otherwise stated, assume all pendulums are located on earth)

1. What is the period of a pendulum with a length of 25 centimeters?

2. What is the period of a pendulum with a. Length of 140 centimeters?

3. What is the length of a pendulum with a period of exactly 1 second?

4. What is the frequency of a pendulum with a length of 80 centimeters?

5. What is the period of a spring with a spring constant of 50 Newtons per meter attached to a 200 gram mass?

6. What is the period of a spring with a spring constant of 40 Newtons per meter attached to a 100 gram mass?

7. What is the frequency of a spring with a a spring constant of 20 newtons per meter attached of a 400 gram mass?

8. What is the spring constant of a spring that has a period of 0.3 seconds when attached to a 600 gram mass?