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The period T of a spring-mass system of mass m of spring constant k is given by the following equation

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

In an oscillation experiment involving a spring-mass system, the period of the oscillation was found to be (1.02 ± 0.02) s.

The 100 g mass used has a 1% manufacturer uncertainty, while the spring can be assumed to have negligible mass.

What is the percentage uncertainty in the spring constant k ?

A

0.4%

B

2%

C

3%

D

5%

