Elastic Potential Energy Questions

Equation: **$EPE = \frac{1}{2} kx^2$**

k = Spring Stiffness (Newtons per Metre, N/m)
x = Extension or Compression (Metre, m)

1. A spring with a spring constant of 200 N/m is stretched by 0.3 m. What is its elastic potential energy?

2. A rubber band has a spring constant of 50 N/m and is extended by 0.2 m. Calculate its EPE.

3. A trampoline spring has a spring constant of 150 N/m and is compressed by 0.1 m. What is the stored elastic potential energy?

4. A spring with a spring constant of 300 N/m is stretched by 0.05 m. What is its EPE?

5. A slingshot's elastic band has a spring constant of 100 N/m and is pulled back 0.25 m. Find the elastic potential energy.

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6. A metal coil with a spring constant of 80 N/m is stretched by 0.4 m. What is the stored EPE?

7. A spring door closer with a spring constant of 250 N/m is compressed by 0.12 m. Calculate the elastic potential energy.

8. A toy spring with a spring constant of 60 N/m is extended by 0.15 m. What is the EPE?

9. A small spring in a pen has a spring constant of 20 N/m and is compressed by 0.02 m. What is the stored energy?

10. An archery bow string has an effective spring constant of 180 N/m and is drawn back 0.3 m. Find the elastic potential energy.