

ERRATA for
FE Other Disciplines Practice Exam
ISBN: 978-1-947801-04-2
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Errata posted 8/21/2020

Revisions are shown in red.

Solution 56, p. 78:

The second line of the solution should read as follows:

For mechanical springs, the deflection and force are related by $F = kx$, where the **spring** constant is k .

Question 66, p. 38:

The options should read as follows:

- A. 33 MPa
- B. **111 MPa**
- C. 21 GPa
- D. 200 GPa

Solution 66, p. 83:

Refer to the Columns section in the Mechanics of Materials chapter of the *FE Reference Handbook* to determine the critical buckling stress. Pinned on both ends would be pinned-pinned, so **$K = 1.0$** .

Examinees are expected to know that E is the elastic modulus in this question. From the Typical Material Properties table, determine that steel has $E = 200$ GPa, and $GPa = 10^9$ N/m².

$$\sigma_{cr} = \frac{\pi^2 E}{\left(\frac{Kl}{r}\right)^2} = \frac{\pi^2 \left(200 \times 10^9 \frac{\text{N}}{\text{m}^2}\right)}{\left(\frac{1.0 \times 20 \text{ m}}{0.15 \text{ m}}\right)^2} = \frac{1.974 \times 10^{12} \frac{\text{N}}{\text{m}^2}}{17,778} = \mathbf{111 \text{ MPa}}$$

THE CORRECT ANSWER IS: B