ERRATA for

FE Other Disciplines Practice Exam

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Errata posted 10/20/2020

Revisions are shown in red.

Question 66, p. 38:

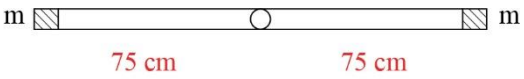
- ○ A. 33 MPa
- ○ B. 111 MPa
- ○ C. 21 GPa
- ○ D. 200 GPa

Solutions Table, p. 58:

99: D

Solution 46, p. 73:

Refer to the Dynamics chapter of the *FE Reference Handbook*.



$$I_1 = \frac{1}{12} m_n L^2 = \frac{2}{12}(15)^2 = 37.5 \text{ g cm}^2$$

$$I_2 = 3I_1 = 3(37.5) = 112.5 \text{ g cm}^2$$

$$I_2 = 37.5 + 2m\left(\frac{L}{2}\right)^2 = 37.5 + 2m(7.5)^2 = 37.5 + 112.5m = 112.5$$

$$m = 0.667\text{g}$$

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.

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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/m^2.

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

THE CORRECT ANSWER IS: B

Solution 99, p. 97:

THE CORRECT ANSWER IS: D