

ERRATA for
FE Civil Practice Exam
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Revisions are shown in red.

Solution 41, p. 86

41. The solution should read as follows:

Because the concrete mix design specified a water-to-cement ratio, the most appropriate way to increase the slump of the concrete is to add an admixture that will increase the slump without affecting the water-to-cement ratio.

Solution 97, p. 107:

97. Use Law of Cosines

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$\cos A = \frac{480^2 + 720^2 - 390^2}{2(480)(720)}$$

$$A = 30^\circ 18' 47''$$

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Question 42, p. 33:

The following preliminary concrete mix has been designed assuming that the aggregates are in oven-dry condition. **However, the aggregates used are in SSD condition.**

Water = 305 lb/yd³
Cement = 693 lb/yd³
Coarse aggregate (SSD) = 1,674 lb/yd³
Fine aggregate (SSD) = 1,100 lb/yd³

The properties of the aggregates are:

Property	Coarse Aggregate	Fine Aggregate
Absorption (moisture content at SSD)	0.5%	0.7%
Moisture content as used in mix design (oven-dry condition)	2.0%	6.0%

The amount of water (lb/yd³) that would be used in the final mix is most nearly:

- A. 206
- B. 222
- C. 305
- D. 388

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Solution 34, p. 84:

Refer to Cylindrical Pressure Vessel in the Mechanics of Materials section of the *FE Reference Handbook*.

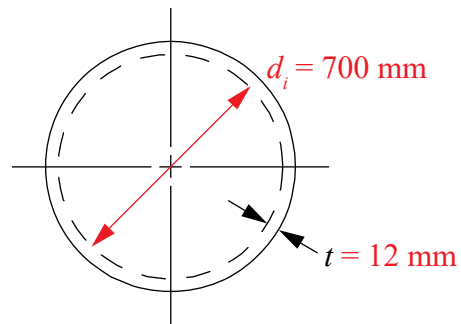
The cylinder can be considered thin-walled if $\frac{t}{\frac{d_i}{2}} \leq 0.10$. In this case, $t = 12$ mm and $d_i = 700$ mm.

Since $\frac{t}{\frac{d_i}{2}} = \frac{12}{350} = 0.034$ which is ≤ 0.10 , the pipe is thin-walled.

$$\text{Thus } \sigma_t = \frac{P_i r}{t}$$

$$\text{where } r = \frac{r_i + r_o}{2} = \frac{350 + 362}{2} = 356 \text{ mm}$$

$$\sigma_t = \frac{(1.680 \text{ MPa})(356 \text{ mm})}{12 \text{ mm}} = 49.8 \text{ MPa}$$



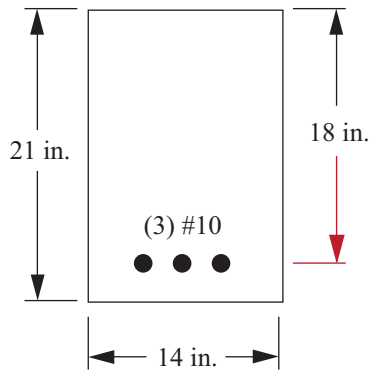
THE CORRECT ANSWER IS: B

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Question 67, p. 50:

The figure should appear as follows:



$$f'_c = 4,000 \text{ psi}$$

$$f_y = 60 \text{ ksi}$$

Question 89, p. 62:

Question 89 has been replaced by the following:

Typically, groundwater is likely to contain high concentrations of:

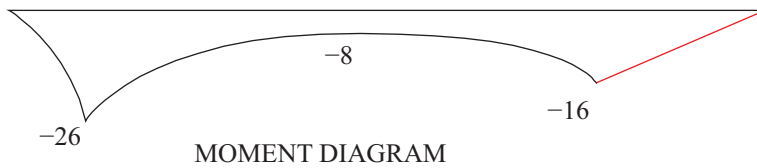
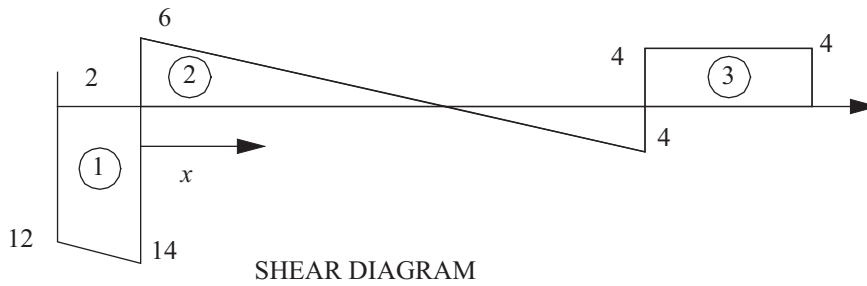
- A. particles measured as turbidity
- B. microorganisms
- C. calcium hardness
- D. algae

THE CORRECT ANSWER IS: C

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Solution 33, p. 83:

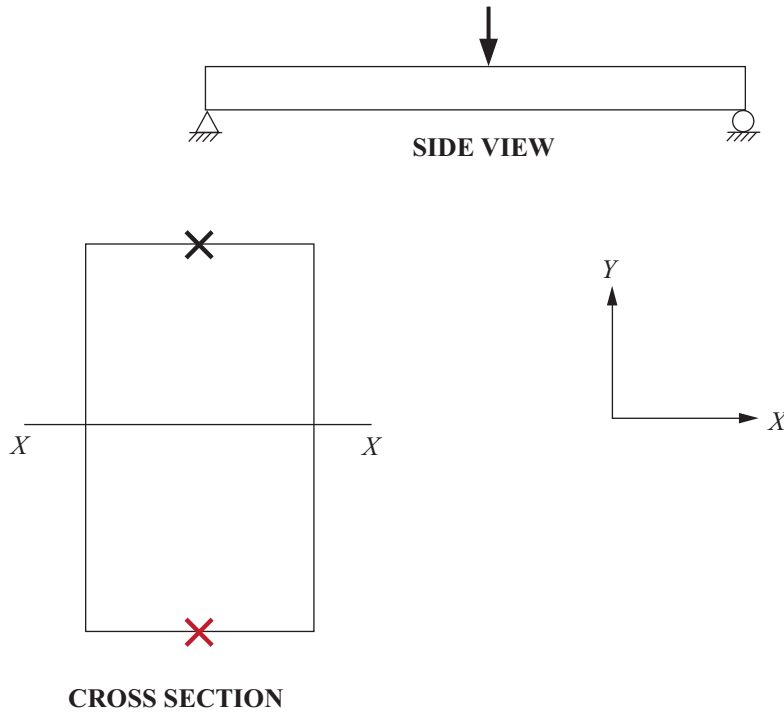
The figure should appear as follows:



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Solution 64, p. 96:

The figure should appear as follows:



Solution 89, p. 105:

The solution should read as follows:

Calcium and other ions dissolve as precipitation percolates through soil, resulting in high concentrations in groundwater.

Previously posted errata continued on next page

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Question 73, p. 54:

The second sentence should read as follows:

The Rankine **passive force (lb/ft)** possible on the wall is most nearly:

Solution 73, p. 100:

The correct answer is 27,000 **lb/ft**.