Revisions are shown in red.

Solution 97, p. 107:

97.   Use Law of Cosines

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

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

$$A = 30°\ 18'\ 47''$$

Previously posted errata continued on next page

Revisions are shown in red.

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/yd^3
Cement = 693 lb/yd^3
Coarse aggregate (SSD) = 1,674 lb/yd^3
Fine aggregate (SSD) = 1,100 lb/yd^3

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/yd^3) that would be used in the final mix is most nearly:

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

Solution 34, p. 84:

Refer to Cylindrical Pressure Vessel in the Mechanics of Materials section of the *FE Reference Handbook*.
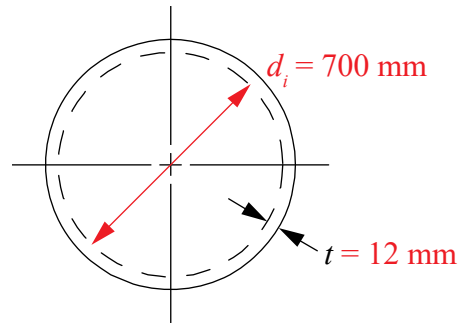
The cylinder can be considered thin-walled if $\dfrac{t}{\frac{d_i}{2}} \leq 0.10$. In this case, $t = 12$ mm and $d_i = 700$ mm.

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

Thus $\sigma_t = \dfrac{P_i r}{t}$

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

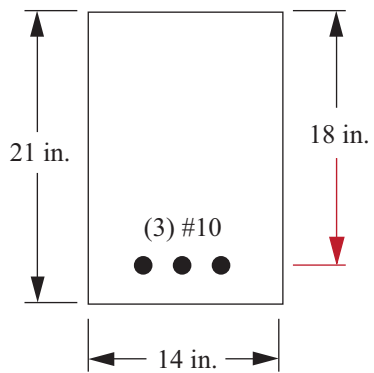$\sigma_t = \dfrac{(1.680 \text{ MPa})(356 \text{ mm})}{12 \text{ mm}} = 49.8 \text{ MPa}$

$d_i = 700$ mm

$t = 12$ mm

THE CORRECT ANSWER IS: B

Revisions are shown in red.

Question 67, p. 50:

The figure should appear as follows:

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

$f_y = 60$ ksi

Question 89, p. 62:

Question 89 has been replaced by the following:

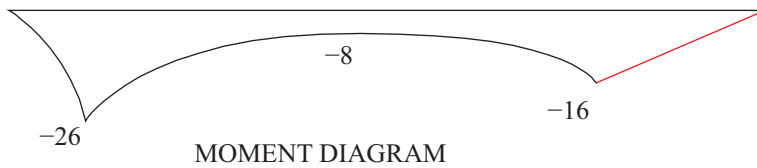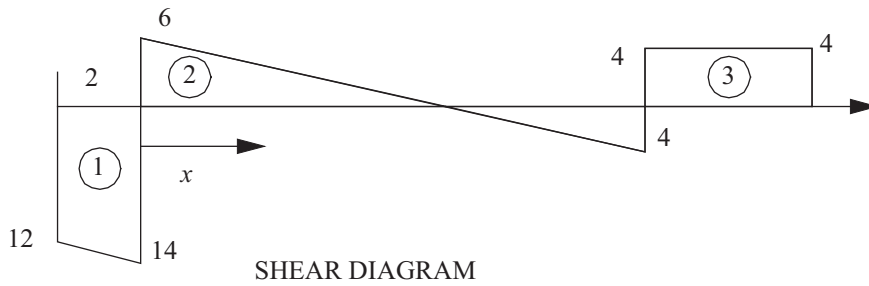Typically, groundwater is likely to contain high concentrations of:

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

THE CORRECT ANSWER IS: C

Solution 33, p. 83:

The figure should appear as follows:

SHEAR DIAGRAM

MOMENT DIAGRAM

Solution 64, p. 96:

The figure should appear as follows:

SIDE VIEW

CROSS SECTION

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.

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Revisions are shown in red.

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.