Revisions are shown in red.

Question 13, p. 20:
A mining shovel has a 40-yd³ bucket. It is digging in ore with an in situ weight of 4,000 lb/yd³. The bucket fill factor is 80% and the material swell factor is 16%. The shovel loads trucks rated for 300 tons with a fill factor of 92% and with an average cycle time of 38 sec per pass. The time (min) to load each truck is most nearly:

- A. 2.53
- B. 2.72
- C. 3.17
- D. 3.42

Question 14, p. 21:
The crosscut dimensions are: 15 ft wide × 120 ft long × 16 ft high.

Question 72, p. 58:
A rural community is complaining to a coal mining company that its underground operations are creating surface subsidence. Which of the following features are not evidence of mining-induced subsidence?

Select the two that apply.

- □ A. Sinkhole
- □ B. Weathered topsoil
- □ C. Tension cracks
- □ D. Troughs and sags
- □ E. Minor stucco cracks in a house
- □ F. Localized trough in the road
- □ G. Rills
Question 73, p. 59:
The capacity of the mined-out pit is 10M cy.

Solution 13, p. 78:
Shovel bucket:
\[
\frac{(4,000 \text{ lb/yd}^3)/1.16 \times 40 \text{ yd}^3 \times 0.80)}{2,000 \text{ lb/ton}} = 55.2 \text{ tons/bucket}
\]

Buckets per truck:
\[
\frac{(300 \text{ tons/truck}) \times 0.92)}{(55.2 \text{ tons/bucket})} = 5 \text{ buckets/truck} = 5 \text{ shovel passes}
\]
\[
5 \text{ passes} \times 38 \text{ sec/pass} = 190 \text{ sec} = 3.17 \text{ min}
\]

THE CORRECT ANSWER IS: C

Solution 72, p. 100:
Weathered topsoil and rills are caused by water erosion, not subsidence. All other options could be mining-induced.

THE CORRECT ANSWERS ARE: B, G

Solution 73, p. 100:
\[
10M \text{ cy} \times 27 \text{ ft}^3/1 \text{ yd}^3 \times 83.5 \text{ lb/ft} \times \text{ton/2,000 lb} = 11.3 = 11 \text{ million tons}
\]

THE CORRECT ANSWER IS: B

Solution 83, p. 103:
A ratio of 2:1 or greater is common knowledge in the industry, shown in many references and the SME Mining Reference Handbook. Pools can be designed based on other ratios with modified designs, such as with channels through ponds to slow flow or with berms or other infrastructure, but 2:1 or greater is the general rule of thumb. The critical concept is that pool length must be greater than pool width, with only one correct answer given.

THE CORRECT ANSWER IS: C