Problem 1

Sincich, Ex. 7.13. Calories in school lunches.
(Note: if you have the 2nd edition of the textbook, then the problem number is 6.13.)

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Problem 2

Sincich, Ex. 7.34. Accounting and Machiavellianism.
(2nd edition: Ex. 6.22.)

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Problem 3

Sincich, Ex. 7.37. Producer's and consumer's risk.
(2nd edition: Ex. 6.27.)

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Problem 4

Sincich, Ex. 7.22.
(2nd edition: Ex. 6.36)

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Problem 5

Sincich, Ex. 7.54. A new dental bonding agent.
(2nd edition: Ex. 6.54)

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Problem 6

Sincich, Ex. 7.55 (a)–(e). Surface roughness of pipe.

Oil field pipes are internally coated in order to prevent corrosion. Researchers at the University of Louisiana, Lafayette, investigated the influence that coating may have on the surface roughness of oil field pipes (*Anti-corrosion Methods and Materials*, Vol. 50, 2003). A scanning probe instrument was used to measure the surface roughness of each in a sample of 20 sections of coated interior pipe. The data (in micrometers) for 20 sampled pipe sections are reproduced in the `RPIPE.CSV` file.

(a) Give the null and alternative hypotheses for testing whether the mean surface roughness of coated interior pipe, μ, differs from 2 micrometers.

(b) Find the test statistic for the hypothesis test.

(c) Give the rejection region for the hypothesis test, using $\alpha = .05$.

(d) State the appropriate conclusion for the hypothesis test.

(e) Here is a Minitab printout giving the test results. Find and interpret the p-value of the test.

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Test of mu = 2 vs not = 2

Variable   N    Mean  StDev  SE Mean      95% CI          T      P
ROUGH     20   1.881  0.524    0.117  (1.636, 2.126)  -1.02  0.322
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Problem 7

Sincich, Ex. 7.61. Crack intensity of paved highways.
(2nd edition: Ex. 6.61)

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