Answer Keys to Study Guide problems for Final Exam in MA 180/418, Spring 2010

7 on page 127: (a) 135 sec, (b) 3.71, (c) -3.71, (d) Unusual.

14 on page 128: the score of 1190 converts to z = -1.01, and the score of 16.0 converts to z = -1.06, so the score of 1190 is relatively better because it has a higher z score.

21 on page 307: (a) 0.0318 by Table A-2 (0.0305 by calculator); (b) 0.2676 by Table A-2 (0.2665 by calculator).

12 on page 232: (a) $\mu = 24.0$ and $\sigma = 4.3$ (b) the range of usual values is from 15.4 to 32.6.

42 on page 343: (a) 423 and (b) 125.

32 on page 354: 1037.

25 on page 368: $-0.471 < \mu < 3.547$.

9 on page 421: $H_0: p = 0.75$, $H_1: p \neq 0.75$. Test statistic z = 2.56. Critical values: $z = \pm 2.575$. P-value: 0.0104 by Table A-2 (0.0105 by calculator). Accept H_0 and the original claim.

26 on page 441: $H_0: \mu = 48.0, H_1: \mu > 48.0$. Test statistic t = 1.070. Critical value: t = 1.833. P-value: > 0.10 by Table A-3 (0.1561 by calculator). Accept H_0 . Reject the original claim.

11 on page 448: $H_0: \sigma = 3.2, H_1: \sigma \neq 3.2$. Test statistic $\chi^2 = 32.086$. Critical values: 12.401 and 39.364. P-value: > 0.20 by Table A-4. Accept H_0 . Reject the original claim. **14 on page 495:** $H_0: \mu_d = 0, H_1: \mu_d \neq 0$. Test statistic t = -17.339. Critical values: ± 2.776 . P-value: < 0.01 by Table A-3 (0.0001 by calculator). Reject H_0 . There is a difference.

15 on page 532: r = 0.867. Critical values $r = \pm 0.878$. P-value: 0.057. There is not sufficient evidence to support the claim of a linear correlation.

15 on page 549: $\hat{y} = 43.6 + 1.31 x$. The best predicted *y*-value is 163.2 (we use \bar{y} here, because the linear regression cannot be used).

13 on page 558: (a) 2.64829, (b) 0.0800433, (c) 2.728333, (d) 0.9706622, (e) 0.1414596. **9 on page 558:** LP.

10 on page 558: either LP and LA, or LP and LOT.

11 on page 558: $\hat{y} = 99.2 + 0.979 \,\text{LP}.$