Final Exam - Spring 2005 - ANSWERS

1. FALSE
2. FALSE
3. TRUE
4. FALSE
5. TRUE
6. TRUE
7. FALSE
8. FALSE
9. TRUE
10. TRUE
11. D
12. D
13. B
14. C
15. A
16. C
17. C
18. D
19. A
20. D
21. B
22. D
23. D
24. A
25. D

26. B

27. D

28. C

29. D

30. A

31. B

32. B

33. A.) MU(x+y) = MU(x) + MU(y) = 11 + 20 = 31 seconds

B.) SIGMA(x+y) = sqrt[SIGMA(x)^2 + SIGMA(y)^2] = sqrt[2^2 + 4^2] = sqrt[20] = 4.47 seconds.

34. z = (418 - 533)/115 = - 1.00

P(X < 418) = P(Z < - 1.00) = 0.1587

35.

	BIAS	VARIABILITY
A.)	HIGH	LOW
B.)	LOW	LOW
C.)	LOW	HIGH
D.)	HIGH	HIGH

36.

A.) Experiment

B.) Observational study

C.) Experiment

D.) Observational study

37.

A.) Categorical Variables: AUTOMOBILE PREFERENCE, GENDER.

B.) Quantitative Variables: AGE, HOUSEHOLD INCOME.

38. A.) LEAST SQUARES LINE: yhat = 37108.8 + 11.8987(x)

B.) b1 = 11.8987 dollars.

C.) CONFIDENCE INTERVAL: 11.8987 +/- 2.120(6.02)

(- 0.8637, 24.6611)

We are 95% confident that for each one square foot increase in house size, the true mean response in assessed value of houses in Ithaca NY changes by between - 0.8637 and 24.6611 dollars.

D.) HYPOTHESES: Ho: B1 = 0 versus Ha: B1 =/= 0

E.) TEST STATISTIC: t = (11.8987)/6.02 = 1.9765

F.) DECISION: Fail to Reject Ho at alpha = 0.01, because p-value = 0.066 > alpha = 0.01

CONCLUSION: There is not enough evidence to conclude that the size of houses and the true mean response of assessed value of houses in Ithaca NY are linearly related at alpha = 0.01.

39.