Fall 2006
Final Exam Review Answers

1. 80
2. $130
3. $1126 million of auto, $752 million of energy, $786 million of transportation
4. (1000 fishing poles, $25,000)
5. $y = -2x + 16$ and $x = 0$
6. $\frac{27}{29}$
7. $(-908/69, -135/23, -412/69)$
8. 21,772,800
9. 13.40%, 6.06% (corrected 12/5/06)
10. $\left[\begin{array}{ccc|c} 1 & 0 & 1 & 17 \\ 0 & 1 & -2 & 4 \\ 0 & 0 & 13 & -11 \end{array}\right]$
11. $a = 6$, $b = 12$, $c = 9$
12. $y = \frac{2}{5}x + 9$
13. 3.5265%
14. 3 cars, 5 vans, 10 buses
15. $y = -1.55x + 19.95$, 2010, since $|r|$ is very close to 1, we say the line fits the data well.
16. $14,600 worth of food, $5,200 worth of cloth
17. 5/11
18. Yes, No
19. (a) $2046.53
    (b) $1,540.48
    (c) $401,922.96
20. 0.5624
21. See solutions
22.

x	$P(X = x)$
$0.03	$\frac{120}{455}$
$0.12	$\frac{225}{455}$
$0.21	$\frac{100}{455}$
$0.30	$\frac{10}{455}$

23. 0.3125 years
24. (a) continuous
    (b) infinite discrete
    (c) finite discrete
25. 0.7574
26. 360,360
27. All are valid
28. 0.6275
29. $30,636.59
30. $E(X) = .38$, $\sigma = 11.70707$, $Var(X) = 137.0556$, Median$= -5$, Mode$= -5$
31. (a) $\{8, 10\}$
    (b) $\{2, 4, 6, 12\}$
    (c) $\emptyset$
32. 94.93%
33. 5
34. $a = -13$
35. 19.0252
36. 4 servings of brand A and 0 servings of brand B. 12 ounces of leftover flakes, no leftover nuts
37. See solutions
38. 4,944 (corrected 12/6/06)
39. (a) $S = \{H1, H2, H3, H4, H5, H6, T1, T2, T3, T4, T5, T6\}$
    (b) $E = \{H2, H4, H6, T2, T4, T6\}$
    (c) 1/2
40. 8.75 years
41. 4/9
42. 4/9
43. (a) $(\frac{25}{17} - \frac{54}{17}t, \frac{39}{17} - \frac{4}{17}t, t)$
    (b) $(23/3, -16/3, -16/3)$
    (c) No solution
44. 0.8
45. 0.2161
46. $8,333.33
47. 0.9961
48. (a) 0.545
    (b) 0.2569
    (c) 0.68

49. 68

50. A minimum value of 28 occurs at the points $(6, 4)$ and $(14, 0)$ and at every point on the line segment connecting the two points.

51. (a) Yes
    (b) Yes
    (c) Given you are currently in state B, the probability that you will transition into state C is 0.3
    (d) Given you are currently in state C, the probability that you will transition into state A is 0.3

52. \$2.25

53. 0.3278

54. See solutions

55. 0.6827

56. (272 units,\$50.43)

57. \$29,058.78

58. $b = -2$

59. 250 students

60. $(-2, -3.5)$