MATH 141 (Answers to Extra Practice 2)

1. 100,172,160
2. 69,120
3. 840
4. 1,722
5. Corner points: $(0,0),(0,235),(180,145),(225,43),(225,0)$
   Maximum Profit = \$21.11
   Vanilla Pudding needed: 225 servings; Chocolate pudding needed: 43 servings;
6. True, False, False, True, True
7. if x = # of servings of casserole and y = # servings of salad
   Minimize $C = 325x + 45y$ subject to:
   $4x + 5y \geq 36, 8x + 2y \geq 24, x \geq 0, y \geq 0$
8. 12.
9. (a) $S = \{ggg, ggr, grg, grr, rgg, rgr, rrg, rrr\}$; (b) $E = \{ggr, grg, rgg\}$
10.
11.
12.
13. $F = \{0, 1, 2, 3, 4\}$
14. 28
15. No, $E \cap F = \{6, 8, 10\}$
16. If $x = \#$ of small collars and $y = \#$ of large collars, then
    Maximize: $R = 18x + 40y$ subject to $7x + 10y \leq 2500$, $14x + 16y \leq 540$, $y \geq 3x$, $x \geq 0$, $y \geq 0$
17. Corner points: $(3.5, 7.5), (1.13, 2.75), (3.5, 2.75)$; Max = 36 occurs at $(3.5, 7.5)$; Min = 12.28 occurs at $(1.13, 2.75)$
18. 18 played all 3 sports.
19. Maximize $P = 100x + 60y$ subject to: $2x + y \leq 8; 300x + 100y \leq 1800; x \geq 0, y \geq 0$
20. 1728
21. 31
22. 15,240,960
23. 1,429,260
24. (a) (make a 4x4 dice chart) ; (b) $E = \{(4, 2), (3, 3), (2, 4)\}$; (c) $F = \{(1, 2), (2, 2), (3, 2), (4, 2)\}$