

Spring 2018 Math 139 Answers

1. a) 40200 b) 70 c) 504

2. a) 32 b) 23

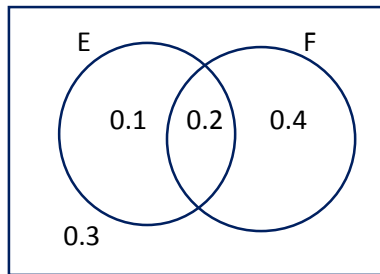
3. a) $10 \times 9 \times 8 \times 52 \times 51 \times 50 \times 49$ b) $10 \times 9 \times 8 \times 52^4$

4. a) $C(12,0)(0.32)^{12}$ b) $C(12,5)(0.32)^5(0.68)^7$

c) $C(12,11)(0.67)^{11}(0.32)^1 + C(12,12)(0.67)^{12}$

5. a) $C(26,6) / C(52,6)$ b) $C(50,4) / C(52,6)$ c) $[C(4,4)C(4,2) + C(4,4)C(4,1)C(44,1)] / C(52,6)$

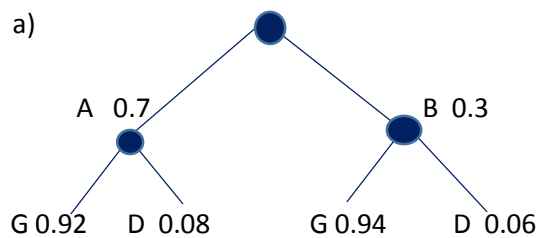
6. a)



b) 0.1 or 1/10 c) 0.2 or 1/5

d) 1/3 e) No; $P(E) \neq P(E|F)$

7. a)



b) $\frac{9}{37}$

8. a) $Y = \frac{-2}{5}x + \frac{11}{5}$

b) Coincident; they have the same slope and same y intercept.

9. $\frac{7!}{2!2!2!} = 630$

10. a) $\begin{bmatrix} 2 & \frac{-5}{2} \\ -1 & \frac{3}{2} \end{bmatrix}$

b) $\begin{bmatrix} 11 & 15 & -11 \\ 8 & 12 & -8 \end{bmatrix}$

11. $x = 4, y = -2, z = 6.$

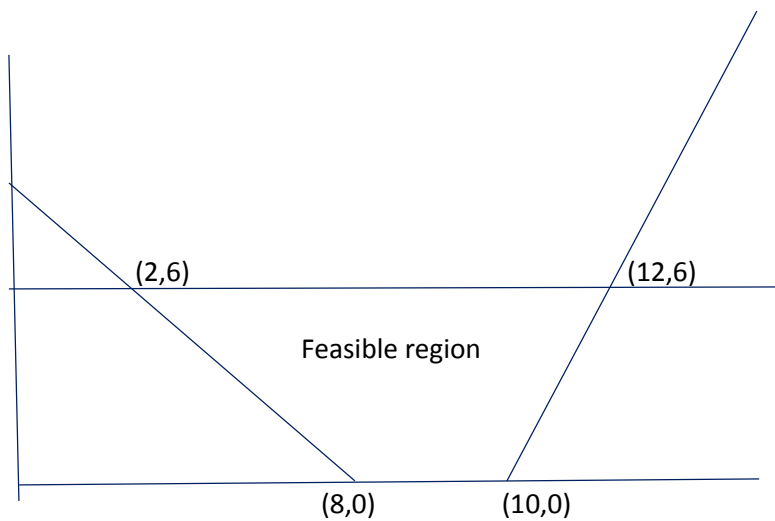
12. a) $x = 5, y = 7 - z, Z$ is any real number

b) $x = 2, y = 6, z = 8$ c) no solution exists

13. B = blue, R = red, G =green, P = profit
 maximize $P = 17B + 35G + 12R$ $R, G, B \geq 0$

$$4B + 2R + 5G \leq 1850 ; 12B + 10R + 13G \leq 3300; 180 \leq 3B + 3R + 4G \leq 300$$

14. a)



b) Maximum is 60 at (12,6)

15. a) $x_2 = 11, x_1 = 0, P = 19$ b) no optimal solution all entries in the pivot column are non-positive
c) pivot needed. The 4 in the x_2 column is the pivot element.

16. The maximum is 24 when $x_1 = 0, x_2 = 6$ and $x_3 = 0$.