

1) $y = 0.8 \left(\frac{1.6}{0.8} \right) x - 55$

A. $x = 85, y = 81$

B. $y = 84, x = 86.875$

C. $y = 60, x = 71.875$

D. $x = 60, y = 41$

2) A. 95% confidence interval is (145.10, 154.90); $2 \left\{ \frac{(1.96)(25)}{\sqrt{100}} \right\} = 9.8$

B. 99% confidence interval is (143.55, 156.45); $2 \left\{ \frac{(2.58)(25)}{\sqrt{100}} \right\} = 12.9$

C. 0.8

D. $1.96 \left(\frac{25}{\sqrt{n}} \right) = 2; n = 601$

3) A. $\text{Geometricpdf}(0.9, 2) = 0.09$

B. $\text{Geometricpdf}(0.1, 3) = 0.081$

C. $1/p = 10$

D. $\text{variance} = \frac{1-p}{p^2} = 90$

4) A. plug $x=70$ and solve. $Y = 18.87$

B. plug $y=19$ and solve. $X = 70.48$

C. $0.2738 = r \left(\frac{1.5}{2.5} \right) \rightarrow r^2 = 0.20824 = 0.21$

D. .46

5) A. $P(\text{Heating fire}) = 0.19$

B. $P(\text{Family home fire}) = 0.73$

C. $P(\text{Heating fire} | \text{Apartment fire}) = 6/100 = 0.06$

D. $P(AH) = P(A)P(H|A) = (0.20)(0.3) = 0.06$ ($6/500 = 0.012$)

6) A. ${}_3C_1(.15)(.85)^2 = .325125$.325

B. $1 - (.85)^3 = 0.385875$.386

C. $1 - .15^3 = .996625$.997

D. $(.85)^2(.15) = .108375$.108

7) A. .64

B. .04

C. .32

D. .25 $2/16 = 0.125$

8) A. $P(X < 9.98) = 0.03(10) = 0.3$

B. $P(Y > 5.01) = (0.09)(5) = 0.45$

C. $P(X < 9.98 \text{ and } Y > 5.01) = 0.3(0.45) = 0.135$

D. Find $\mu_{X+Y} = 15$

9) A. $1 - P(Z) = 0.007$

B. $Z_{@25\%} = -0.6745 \rightarrow x = 419$

C. $P(420 < x < 520) = .419$

D. $(135 - 100)/15 = 2.33$ $2.33 = (x - 480)/90$ $x = 690$

10) A. $p(X=2) = 0.1536$

B. $p(X \geq 2) = P(x=2) + P(x=3) + P(x=4) = .1808$

C. $E(X) = np = 0.8$

D. $V(X) = np(1-p) = 0.64$

11) A. 72

B. 50

C. .22

D. $72 - 42 = 30$

- 12) A. $1/36 + 2/36 + 3/36 + 4/36 + 5/36 = 15/36 = 5/12$
 B. $2/36 + 4/36 + 6/36 + 4/36 + 2/36 = 18/36 = 1/2$
 C. $1/36 + 3/36 + 5/36 + 5/36 + 3/36 + 1/36 = 18/36$ $18/36 + 6/36 = 24/36 = 2/3$
 D. (1,1)(1,2)(1,3)(1,4)(1,5)(1,6)(6,1)(5,1)(4,1)(3,1)(2,1) $2/11$
- 13) A. $55/100 = 11/20$
 B. $27/200$
 C. $32/60 = 8/15$
 D. $(100 + 100 - 55)/200 = 145/200 = 29/40$
- 14) A. $P(X \text{ and } Y) = .6(.4) = .24$
 B. $P(X \text{ or } Y) = .6 + .4 - .24 = .76$
 C. $P(X \text{ given } Y) = .24/.4 = .6$
 D. $P(\text{neither } X \text{ nor } Y) = .4(.6) = .24$
- 15) A. caloric intake and exercise
 B. 9 3 levels x 3 levels
 C. 180 9(20)
 D. 2 of control, randomization, replication