Question No. (2.34) Probability of card game.

a)

	Red Card	Spade	Club	Ace Club	Std
x	0	5	10	30	
p(x)	1/2	1/4	3/13	1/52	
Expected Winnings	0.00	1.25	2.31	0.58	0.858345

P(x) = 0*(1/2) + 5 * (1/4) + 10*(12/52) + 30*(1/52)

Answer = 4.134615

Standard Deviation = 0.85

b) On average, the wining is $4.13. One should not pay more than $4.13 playing significant amount of times.

Question No. (2.40) Airlines and their baggage fees.

a) (0.54 * 0) + (.34* 25) + (.12 * 60)

Answer = $ 15.7

Standard Deviation = 14.07871

b) Expected revenue on 120 passenger
120 * 15.7 = $1884

Standard Deviation = 120*14.07871 = $1.689

Question No. (2.42) Selling on Ebay

a) 38 – 110 = - 72

Answer = 72 Dollar loss.

Standard Deviation = square root of (4^2 + 5^2) = 6.40

b) 110* 0.1 = 11
Standard Deviation = 4* .1 =0.4
Answer: Lucy should expect to make 11 dollars with $0.4 standard deviation

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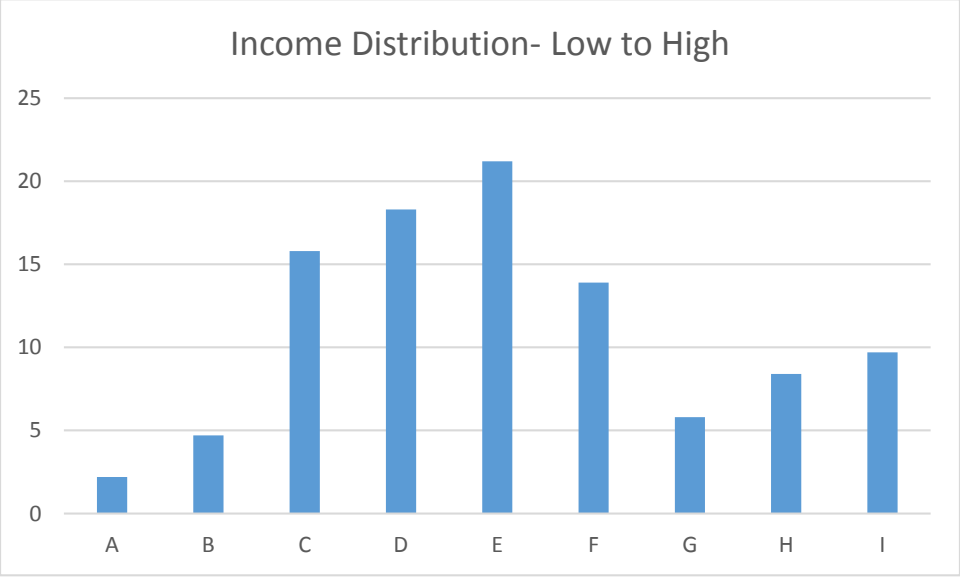
Question No. (2.46)

a) Distribution of total personal income is almost a perfect bell curve distribution. The density of residents with highest income is higher compared to the lowest income population.



b) Probability that a randomly chosen resident makes less than $50000
21.2+18.3+15.8+4.7+2.2 = 62.2 %

c) 62.2 * .41 = 25.502%

d) 71.8% of females make less than $ 50 k per year. This makes the assumption in part c invalid.

Part c assumes the residents with less than 50k incomes comprised of the same gender distribution – 59% males and 41% females.