Session 3 Worksheet

Formulas

$$\mu = \sum x_i p_i \qquad \sigma = \sqrt{\sum x_i^2 p_i - \mu^2}$$

1) A local pizza shop keeps track of how many deliveries a single driver makes in one evening. The number of deliveries can only be whole numbers (0, 1, 2, 3, …). Based on past records, the probabilities for deliveries in an evening are:

Deliveries (X)	Probability P(X)
0	0.05
1	0.15
2	0.30
3	0.25
4	0.15
5	0.10

a. Is this probability table possible?

b. What is the probability that the driver makes at most 2 deliveries in one evening?

c. What is the probability that the driver makes more than 3 deliveries?

d. What is the mean number of deliveries?

e. What is the probability that the driver makes between 2 and 4 deliveries (inclusive)?

2) A small arcade has a machine that gives out tickets when someone plays. The number of tickets you can win is modeled by this probability function:

$$P(X = x) = \frac{x}{15},\ x = 1,2,3,4,5$$

a. Fill out the following table

X	Formula	Probility
1		
2		
3		
4		
5		

b. Is this a valid probability table?

c. What is the probability a player wins at least 3 tickets in one game?

d. Find the mean.

e. Complete the following table and find the standard deviation.

x	$x_i \times p_i$	x_i^2	$x_i^2 \times p_i$
1			
2			
3			
4			
5			