

Notes 4.1 Probability Distribution Part B

II. Mean, Variance, and Standard Deviation

Formula for mean of a discrete random variable:

In words, how do you find the mean?

Formula for variance of a discrete random variable:

In words, how do you find the variance?

Formula for standard deviation of a discrete random variable:

Example 4:

Find the mean, variance, and standard deviation from the new employee sales from Example 2.

$$\mu = \underline{\hspace{2cm}}$$

$$\sigma^2 = \underline{\hspace{2cm}}$$

$$\sigma = \underline{\hspace{2cm}}$$

x	$P(x)$	$xP(x)$	$x - \mu$	$(x - \mu)^2$	$P(x)(x - \mu)^2$
0					
1					
2					
3					
4					
5					
6					
7					

III. Expected Value =

Example 5:

During a one-year selling period (225 days), a sales representative made between 0 and 9 sales per day, as shown in the table. If this pattern continues, what is the expected value for the number of sales per day for the sales representative?

Number of sales, x	0	1	2	3	4	5	6	7	8	9
Frequency, in days	25	48	60	45	20	10	8	5	3	1

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Example 6:

At a raffle, 1500 tickets are sold at \$2 each for four prizes of \$500, \$250, \$150, and \$75. You buy one ticket. What is the expected value of your gain?

Gain, x					
Probability, P(x)					

Assignment: New textbook: pgs 203 – 205/ 29, 34, 35, 39, 46

Old textbook: pgs 161 – 162/ 23