

The age and glucose level of 6 individuals is given. Find each 2-decimal answer.

Pearson Correlation

Linear Regression Line

Age	Glucose Level
43	99
21	65
25	79
42	75
57	87
59	81

What glucose level would a 40-year-old have?

What ages would generate a glucose level of 71?

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STAT - Chapter 6 Section 1

**Random Variable** - A \_\_\_\_\_ with a value that depends on chance. It is \_\_\_\_\_ if you can list all of the possible values.

**An Event vs Probability of an Event**

An Event is something that occurs: \_\_\_\_\_

Probability of an event is how likely the event is to happen: \_\_\_\_\_

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Suppose a member is selected at random where  $y$  denotes the value of the variable  $y$  &  $f$  is the frequency

$y$	$f$
2	4
4	6
6	8
8	7

How do you represent:

“Event Y takes on the value of 4”

How do you represent “Event Y takes on a value less than 6”

Find the Probability Distribution (Relative Frequency)

What is  $P(Y > 4)$ ?

Is each a probability distribution – if not, why?

X	-3	1	2	3
$P(X=x)$	-0.25	0.25	0.4	0.6

X	0	1	2	3
$P(X=x)$	0.3	0.2	0.1	0.4

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A manager tracked breakdowns for 25 days and found on 8 days equipment broke once, on 6 days equipment broke twice, and on the remaining days it ran without breaking.

X				
$P(X=x)$				

What % of the days does it break 1 or more times?

What % of the days does it break less than once?

What % of the days does it break less than twice?

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A waitress decided to track her tips for 21 days. She found that she made \$58 on 7 days, \$72 on 9 days, and \$97 on the remaining days.

X				
$P(X=x)$				

What % of the days does she make over \$60?

What % of the days does she make \$72 or less?

What % of the days does she make under \$72?

STAT - Chapter 6 Section 2

For a Discrete Random Variable

Mean = \_\_\_\_\_

Variance = \_\_\_\_\_

SD = \_\_\_\_\_

Finding Mean, Variance, and SD

X	1	3	5
P(X=x)	0.4		0.5

Mean =

Variance =

SD =

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X	1	2	3	4	5	6
P(X=x)	0.08	0.27	0.11	0.25		0.20

Mean =

Variance =

SD =

A wheel has 30 numbers, 13 red, 13 blue, and 4 green spaces. If you bet \$5 on a color and it is selected, you get \$6 back. If the color is not selected, you lose your money.

Make a probability table for selecting a red:

X			
P(X=x)			

Find and interpret the mean:

\_\_\_\_\_ on average.

How much will you win/lose if you bet \$5 100 times?

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A manager tracked breakdowns for 23 days and found on 9 days equipment broke once, on 6 days equipment broke twice, and on the remaining days it ran without breaking.

X				
P(X=x)				

\_\_\_\_\_ Mean      \_\_\_\_\_ Variance      \_\_\_\_\_ Standard Dev.

How many breakdowns occur on an average day?

How many breakdowns would occur in a year (245 working days)?

Three workers tracked how many parts they made. They worked for a total of 41 days. The 6-part worker worked 18 days, the 5.5-part worker worked for 12 days, and the 5-part worker worked for the rest of the days. Find 2-decimal answers.

X				
P(X=x)				

\_\_\_\_\_

Mean                      Variance                      Standard Dev.

What is the average daily production?

How many parts would the three be able to make in six months (120 working days)?

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**REVIEW**

Complete the table below and find each 2-decimal answer:

x	-3	-1	4
P(X=x)	0.32		0.41

\_\_\_\_\_

Mean                      Variance                      Standard Dev.

A teacher tracked absences and grades for 6 students. Find each 2-decimal answer.

Pearson Correlation

Linear Regression Line

Absences with a grade of 85??

Grade	Absences
90	1
91	4
78	12
79	15
77	9
80	11

Grade with 10 absences?

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A man tracked the money he found for 31 days. On 8 days he found \$3, on 12 days he found \$2, on 10 days he found \$1, and on one day he lost \$2. Find the 2-decimal answers.

X				
P(X=x)				

\_\_\_\_\_

Mean                      Variance                      Standard Dev.

How much did he find on the average day?

How much would he find in 7 months (212 days)?

STAT - Chapter 6 Section 3

Bernoulli Trial

Repeated trials where:  
Each trial has 2 outcomes: \_\_\_\_\_ = Success \_\_\_\_\_ = Failure  
Each trial is \_\_\_\_\_  
The probability for success is the same for \_\_\_\_\_

Examples:

\_\_\_\_\_  
Guessing the answer to a \_\_\_\_\_  
A new product \_\_\_\_\_  
A team \_\_\_\_\_

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Construct a tree-diagram for a Bernoulli Trial that has the results s = .8 and f = .2

$P(sss) =$

$P(\text{any 2 s's})$

$P(\text{Any 1 s}) =$

Probability Distribution

n is the number of \_\_\_\_\_  
x is the # of \_\_\_\_\_  
p is the probability of \_\_\_\_\_

$P(X) =$

Probably of getting \_\_\_\_\_ x successes with a calculator:

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If you have a coin where  $P(s) = .54$ , what is the probability of getting exactly 2 successes in 4 tries?

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Probably of getting \_\_\_\_\_ x successes with a calculator:

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If you have a coin where  $P(s) = .54$ , what is the probability of getting at most 2 successes in 4 tries?

If a student takes a test and guesses on 6 questions where the probability of failure is .33 per question, find each:

What is the probability she gets exactly 4 correct?

What is the probability she gets at most 3 correct?

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**Mean, Variance, Standard Deviation:**

For a Bernoulli trial, with  
n = # \_\_\_\_\_ p = Probability of \_\_\_\_\_

Mean =

Variance =

Standard Deviation =

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If a student takes a test and guesses on 9 questions where the probability of success is .25 per question, find each if the student wants to get 5 correct:

Mean =

Variance =

Standard Deviation =

A store finds that if a customer enters the store 6 times, the probability of a sale is .32

Find each 2-decimal probability

P(no sale)

P(exactly 3 sales)

P(at most 4 sales)

Find each 2-decimal answer

Mean

Variance

Standard Deviation

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A bag contains 8 blue rocks and 5 green rocks. One rock is pulled from the bag and then replaced. Find each 2-decimal answer

P(a green rock in one try)

P(exactly 6 green in 9 tries)

P(at most 4 blue in 7 tries)

Mean of 9 tries if green is a success

Variance of 9 tries if green is a success