

Math 221: Basic Statistics Quiz #4A

Week #7

Name: _____

SHOW ALL YOUR WORK FOR FULL CREDIT!

The following data set compares monthly sales and monthly advertising expenditures for a dietary weight control product. Compute the correlation coefficient r and the regression line $\tilde{y} = mx + b$. Along the way, calculate the following values: \bar{x} and \bar{y} , $SS(x)$, $SS(y)$ and $SS(xy)$. Use at least 3 decimal digits for your calculations and answers.

Sales (y)	Advertising(x)
12.0	15.0
20.5	16.0
21.0	18.0
15.5	27.0
15.3	21.0

Extra Credit: Why did I choose to label *Advertising* as x and *Sales* as y ?

Math 221: Basic Statistics Quiz #4B

Week #7

Name: _____

SHOW ALL YOUR WORK FOR FULL CREDIT!

The following data set compares monthly sales and monthly advertising expenditures for a dietary weight control product. Compute the correlation coefficient r and the regression line $\tilde{y} = mx + b$. Along the way, calculate the following values: \bar{x} and \bar{y} , $SS(x)$, $SS(y)$ and $SS(xy)$. Use at least 3 decimal digits for your calculations and answers.

Sales (y)	Advertising(x)
23.5	49.0
24.5	21.0
21.3	22.0
23.5	28.0
28.0	36.0

Extra Credit: Why did I choose to label *Advertising* as x and *Sales* as y ?

Math 221: Basic Statistics Quiz #4C

Week #7

Name: _____

SHOW ALL YOUR WORK FOR FULL CREDIT!

The following data set compares monthly sales and monthly advertising expenditures for a dietary weight control product. Compute the correlation coefficient r and the regression line $\tilde{y} = mx + b$. Along the way, calculate the following values: \bar{x} and \bar{y} , $SS(x)$, $SS(y)$ and $SS(xy)$. Use at least 3 decimal digits for your calculations and answers.

Sales (y)	Advertising(x)
24.0	40.0
15.5	3.0
17.3	21.0
25.3	29.0
25.0	62.0

Extra Credit: Why did I choose to label *Advertising* as x and *Sales* as y ?

Math 221: Basic Statistics Quiz #4 Solutions

Week #7

Version A

$\sum x$	$\sum y$	$\sum x^2$	$\sum y^2$	$\sum xy$	SS(x)	SS(y)	SS(xy)	r
97	84.3	1975	1479.59	1625.8	93.2	58.292	-9.62	-0.131

$$\tilde{y} = -0.103x + 18.862.$$

Version B

$\sum x$	$\sum y$	$\sum x^2$	$\sum y^2$	$\sum xy$	SS(x)	SS(y)	SS(xy)	r
156	120.8	5406	2942.44	3800.6	538.8	23.912	31.64	0.2787

$$\tilde{y} = 0.0587x + 22.328.$$

Version C

$\sum x$	$\sum y$	$\sum x^2$	$\sum y^2$	$\sum xy$	SS(x)	SS(y)	SS(xy)	r
155	107.1	6735	2380.63	3653.5	1930	86.548	333.4	0.8158

$$\tilde{y} = 0.1727x + 16.065.$$