206

Math 484 Quiz 1 Fall 2009 Name_____

YOU ARE BEING GRADED FOR WORK, NOT JUST THE FINAL ANSWER.

predictor	coef	stdev	T	p-value
Constant	-1192.82	84.8615	-14.056	0.0000
size	161.855	5.58295	28.991	0.0000

1) It is desired to predict the weight of the brain (in grams) from a measurement of the size of the head. The output above uses data from $n = 267$ people. Output is shown above.

a) Write down the regression equation. ← formula

$\hat{y} = \hat{\beta}_1 + \hat{\beta}_2 x$

$\hat{y} = -1192.82 + 161.855 x$ (x_2)

x_2 ok

b) Predict the brain weight if size = 15.28.

$\hat{y} = -1192.82 + 161.855(15.28) = 1280.324$

90

Label	Estimate	Std. Error	t-value	p-value
Constant	67.7205	10.1386	6.679	0.0000
x2	0.855760	0.0978795	8.743	0.0000
x3	1.11075	0.0761744	14.582	0.0000

2) The output above is for predicting Y = *skeleton length* from X_2 = *spine length* and X_3 = *leg length.*

a) Give the least squares regression equation.

$\hat{y} = \hat{\beta}_1 + \hat{\beta}_2 x_2 + \hat{\beta}_3 x_3$

$= 67.7205 + 0.85574 x_2 + 1.11075 x_3$

b) Predict Y if $X_2 = 390$ and $X_3 = 430$.

$\hat{y} = 67.7205 + 0.85574(390) + 1.11075(430)$

$= 879.089$