**Statistics Help**

1. In a normal distribution, 75% of the items are under 100 and 20% are over 200. Find the mean and standard deviation of the distribution.
2. Use the tabulated values of the standard normal variable (z table) in order to figure out values of z1 and z2 as shown in the following figure:



a. *z*1 =

b. *z*2 =

1. Calculate following probabilities (area under the curve) for the standard normal variable, z:
   1. P(–∞ ≤ z ≤ 1.01) =
   2. P(0 ≤ z ≤ 2.5) =
   3. P(–∞ ≤ z ≤ ∞) =
   4. P(–1.25 ≤ z ≤ 3.19) =
   5. P(–∞ ≤ z ≤ –0.44) =
2. Mean of 10 observations is 100. One of the observations is dropped from the data. Mean of the remaining observations is 9. What is the value of the dropped observation?
3. The following results were obtained from a multiple regression model predicting Y from X1 and X2.



Indicate whether each of the following statements is true or false:

|  |  |  |
| --- | --- | --- |
| Statement | True | False |
| 39% of the total variation in Y can be explained by predictors included in  the regression model. |  |  |
| *X*1 is a significant predictor of *Y.* |  |  |
| Holding *X*2 constant, a one unit increase in *X*1 raises *Y* by 0.56 units. |  |  |
| Predicted value of *Y* is 0 when *X*1 and *X*2 are simultaneously 0. |  |  |
| The intercept is not significantly different from 0 in the population. |  |  |

1. Fill in all unshaded boxes with missing numbers in the following table. This problem will test your understanding of several principles related to elementary statistics and algebraic operations involving the summation notation.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **X** | **Y** | **X2** | **Y2** | **X+Y** | **(X-X̅)** | **(X-X̅)2** |  |
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| **Sum** |  |  |  |  |  |  |  |  |
| **Mean** |  |  |  |  |  |  |  |  |

1. Evaluate expressions *a* through *e* using information about variables X and Y from the following table.
2. Σ( X −Y ) =
3. Σ X −Y =
4. [Σ (X –Y)]2 =
5. (ΣX)2(ΣY)2=
6. ΣX ( X −Y ) =