**Psy 633 linear regression**

**Scenario 1**

|  |  |
| --- | --- |
|  | Strength = -13.97 + 3.02 LBM  *r* = .87 *r*2 = .76 SEE = 19 p = .000 |

1. If we use the above regression equation to predict muscle strength based on lean body mass, what is the unpredicted portion of variability not explained by the model?
2. At what point does the regression line cross the Y-axis?

1. What percentage of the differences in Strength scores is explained by LBM?
2. What is the value for the slope of this equation?
3. How far, on average, would predicted Strength scores be from actual Strength scores?
4. How confident would you be in using this regression solution to predict Strength scores?

Explain your answer.

1. For the following LBM values, determine the predicted Strength (show work!):

*X* = 30

*X* = 70

**Scenario 2**

|  |  |
| --- | --- |
|  | Rating = 59.3 - 2.40 Sugars  *r*  = - .76 *r*2 = .58 SEE = 9.20 *p* = .003 |

1. What is the correlation value for Health Rating and amount of Sugars in cereal?
2. At what point does the regression line cross the Y-axis?
3. What percentage of the differences in Health Rating is explained by amount of Sugar?
4. What is the value for the slope of this equation?
5. How far, on average, would a predicted Health Rating be from the actual Health Rating?
6. If we use the above regression equation to predict health based on amount of sugar, what is the unpredicted portion of variability not explained by the model?

1. How confident would you be in using this regression solution to predict Health Rating scores?

Explain your answer.

1. For the following amounts of Sugar, determine the predicted Health Rating (show work!):

*X* = 3

*X* = 12