ICME Intro to Stats Summer Workshop

Section 5 Exercises

2023-07-24

1. In a sample of 25 cases, two variables have a correlation of 0.45. Do a t-test to see if this result is significant at the $\alpha = 0.05$ level. Use the formula: $t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$. Are the variables significantly correlated?

2. Use the following information to answer the next three exercises. Height (in inches) and weight (in pounds) in a sample of college freshman men have a linear relationship with the following summary statistics:

$\bar{x} = 68.4$
$\bar{y} = 141.6$
$s_x = 4.0$
$s_y = 9.6$
$r_{xy} = 0.73$

Let Y = weight and X = height, and write the regression equation in the form:

- A. What is the value of the slope?

- B. What is the value of the y-intercept?

- C. Calculate the predicted weight for someone 68 inches tall.