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Confidence interval for the predicted value. (Height and Weight.xlsx)

$$Weight = \beta_0 + \beta_1 Male + \beta_2 Height$$
 
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Predict the weight of a male Olympian with a height of 177 cm?

Confidence interval for the predicted value. (Height and Weight.xlsx)

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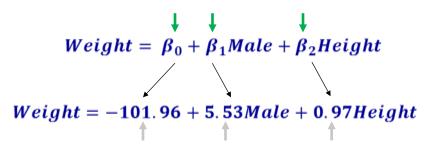
Predict the weight of a male Olympian with a height of 177 cm? =74.72 Kg

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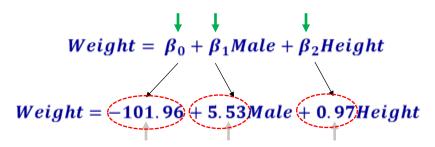
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Confidence interval for the predicted value. (Height and Weight.xlsx)



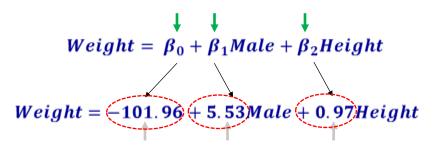
Predict the weight of a male Olympian with a height of 177 cm? =74.72 Kg

Confidence interval for the predicted value. (Height and Weight.xlsx)



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Confidence interval for the predicted value. (Height and Weight.xlsx)



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Confidence interval for beta coefficients

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$$Weight = \beta_0 + \beta_1 Male + \beta_2 Height$$
 
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Estimated value for  $\beta_1$  coefficient: 5.53



Confidence interval for the predicted value. (Height and Weight.xlsx)

$$Weight = \beta_0 + \beta_1 Male + \beta_2 Height$$
 
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On average, a Male Olympian has weight that is 5.53 Kilogram more as compared to a Female Olympian, all other variables kept at the same level.

Estimated value for  $\beta_1$  coefficient: 5.53



Confidence interval for the predicted value. (Height and Weight.xlsx)

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Estimated value for  $\beta_1$  coefficient: 5.53

95% Confidence interval for  $\beta_1$  coefficient: [4.37, 6.69]



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95% Confidence interval for  $\beta_1$  coefficient: [4.37, 6.69]

Margin of error: 5.53 +/- 1.16

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- □ This is based on a *sample*.
- □ A slightly different sample would give us a different prediction.
- □ We can construct a confidence interval for this prediction.

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Predicted value +/- margin of error

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