

The following table shows the hand spans and the heights of eight basketball players on a team

hand span (x cm)	22	23	25	26	27	27	28	29
height (y cm)	190	186	194	190	191	195	201	199

The relationship between x and y can be modelled by the x on y line of regression $x = ay + b$

- Find the values of a and b
- Write down the correlation coefficient
- Another basketball player is 193cm tall. Use this regression line to estimate the handspan of this player.
- Another player is 180cm tall. Use this regression line to estimate the handspan of this player.

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- a) Note that the question asks you for the x on y line of regression. Set up your calculator so this is the case

$$a = 0.377$$

$$b = -47.1$$

- b) $r = 0.782$

- c) Notice that we are using a y value to predict an x value. This is possible because we have the x on y line of regression. Also, 193cm lies within the range of values that we are given. Hence, we are interpolating.

$$x = 0.37749y - 47.075$$

$$x = 0.37749 \times 193 - 47.075$$

$$x = 25.8$$

- d) Also, 180cm lies **outside** the range of values that we are given. Hence, we are extrapolating.

We cannot predict the hand span of this player.