3. *[Maximum mark: 7]*

The following table shows the average weights (y kg) for given heights (x cm) in a population of men.

Heights (x cm)	165	170	175	180	185
Weights (y kg)	67.8	70.0	72.7	75.5	77.2

(a) The relationship between the variables is modelled by the regression equation $y = ax + b$.

   (i)   Write down the value of a and of b.

   (ii) Hence, estimate the weight of a man whose height is 172 cm.   *[4]*

(b) (i)   Write down the correlation coefficient.

   (ii) State which **two** of the following describe the correlation between the variables.   *[3]*

strong	zero	positive
negative	no correlation	weak

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2. *[Maximum mark: 6]*

The following table shows the Diploma score x and university entrance mark y for seven IB Diploma students.

Diploma score (x)	28	30	27	31	32	25	27
University entrance mark (y)	73.9	78.1	70.2	82.2	85.5	62.7	69.4

(a) Find the correlation coefficient. *[2]*

The relationship can be modelled by the regression line with equation $y = ax + b$.

(b) Write down the value of a and of b. *[2]*

Rita scored a total of 26 in her IB Diploma.

(c) Use your regression line to estimate Rita's university entrance mark. *[2]*