1. The table below contains the pulse rates of students before and after exercise in beats per minute.

Pulse Rate Before Exercise (x)	86	88	75	88	64	84	85	91	89	86	87	96
Pulse Rate After Exercise (y)	160	161	150	160	140	155	154	163	158	156	159	160

Find:

(a) Pearson's product-moment correlation coefficient, r　　　　(2 marks)

(b) The equation of the regression line y on x　　　　(2 marks)

(c) Use the line y on x to estimate the pulse rate of a student after exercise if their pulse rate before exercise was 90 beats per minute　　　　(2 marks)

Mark scheme:

(a) $r = 0.9$　　　　　　　　　　　　　　　　(A2)

(b) $y = 0.7x + 95.6$　　　　　　　　　　　　(A1)(A1) For correct gradient and correct y-intercept. Must be in the form of an equation to receive both marks.

(c) $y - 0.7(90) + 95.6$　　　　　　　　　　　(M1)

　　$y = 158.6$　　　　　　　　　　　　　　(A1)