**Linear Regression Practice - Scatter Plot**

1. Your body mass index is calculated by dividing your weight, in kilograms, by your height, in metres, squared.

   Specialists analyzed the relationship between an individual's body mass index and his or her heart rate recorded during physical exercise of medium intensity. The data gathered is represented below.
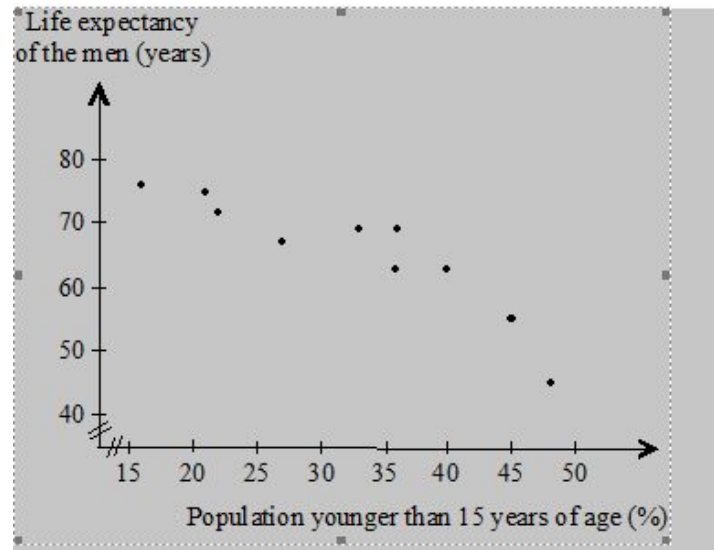
Body mass index	Heart rate
38	70
39	71
42	72
44	77
47	80
50	85
52	90
53	95
58	100
64	110
69	120
70	123
72	126
73	135
73	135
75	136

Relation between body mass index and heart rate
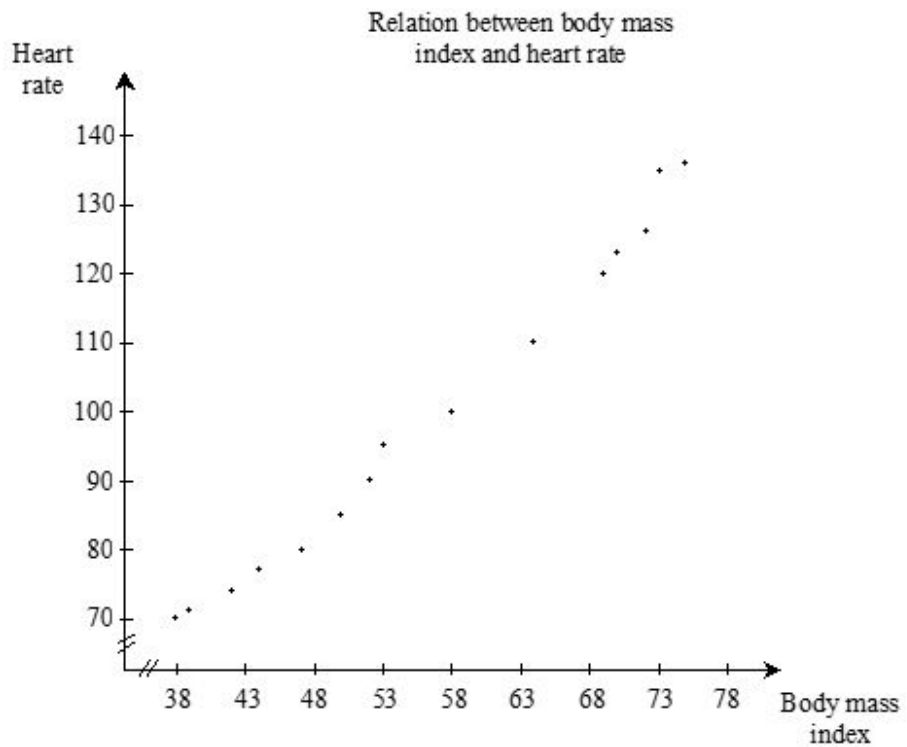
a) Estimate the correlation coefficient

b) During this exercise, the heart rate of the 1.8 m tall person is 105. Determine the approximate weight of this person using the scatter plot and an approximation of the line of regression.

2.   The following table and scatter plot show the relationship between the percentage of the population in various countries that is younger than 15 years of age and the life expectancy of the men who live there.

Country	Population younger than 15 years of age (%)	Life expectancy of the men (years)
Canada	21	75
China	27	67
Colombia	33	69
United-States	22	72
Japan	16	76
Mexico	36	69
Peru	36	63
Philippines	40	63
Senegal	45	55
Somalia	48	45

a) Estimate the correlation coefficient
b) Estimate the life expectancy of the men in a country in which 50% of the population is younger than 15 years old using the scatter plot and an approximation of the line of regression.