Bivariate Data – Sample Task 1

The life span, in years, and gestation period, in days, for 19 types of mammals are displayed in the table below.

Life span (years)	*Gestation period* (days)
3.20	19
4.70	21
7.60	68
9.00	28
9.80	52
13.7	63
14.0	60
16.2	63
17.0	150
18.0	31
20.0	151
22.4	100
27.0	180
28.0	63
30.0	281
39.3	252
40.0	365
41.0	310
46.0	336

A least squares line that enables life span to be predicted from gestation period is fitted to this data.

Task.1

Name the ***explanatory variable*** in the equation of this least squares line.

Explanatory variable: _____

Task.2

Determine the ***equation of the least squares line*** in terms of the variables life span and gestation period. Write your answers in the appropriate boxes provided below. Round the numbers representing the intercept and slope to three significant figures.

	=		+		x	

Task.3
Write the value of the ***correlation coefficient*** rounded to three decimal places.

r =

Task.4
Describe the ***association*** between the two variables, in terms of direction, form and strength.

Task.5
Write the value of the ***coefficient of determination*** rounded to three decimal places.

r^2 =

Task.6
Interpret the ***coefficient of determination*** in terms of *life span* and *gestation period*.

Task.7
Interpret the ***slope*** of the least squares line in terms of *life span* and *gestation period*.

Task.8
Interpret the ***y-intercept*** of the least squares line in terms of life span and gestation period.

Task.9

One particular set of data from the table stated that a mammal of gestation period of 63 days had a life span of 28 years.

Calculate the residual for this set of data, to two decimal places.

$residual =$