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.

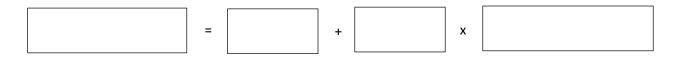
Life span (years)	Gestation period (days)
3.20	19
4.70	21
7.60	68
9.00	28
9.80	52
13.7	63
14.0	60
16.2	63
17.0	150
18.0	31
20.0	151
22.4	100
27.0	180
28.0	63
30.0	281
39.3	252
40.0	365
41.0	310
46.0	336

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.



Task.3
Write the value of the <i>correlation coefficient</i> rounded to three decimal places.
r =
Task.4
Describe the <i>association</i> between the two variables, in terms of direction, form and strength.
Task.5
Write the value of the <i>coefficient of determination</i> rounded to three decimal places.
, and an
$r^2 =$
Task.6
Interpret the <i>coefficient of determination</i> in terms of <i>life span</i> and <i>gestation period</i> .
Task.7
Interpret the <i>slope</i> of the least squares line in terms of <i>life span</i> and <i>gestation period</i> .
Task.8
Interpret the <i>y-intercept</i> 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 =