An outstanding cricketer: Student worksheet

http://topdrawer.aamt.edu.au/Statistics/Misunderstandings/Misunderstandings-of-averages/Plots-and-outliers

1. The statistics for some of the world's greatest No. 3 batsmen are shown in the table below. These cricketers have the best batting averages of all time in first class cricket batting in the No. 3 position.

Player	Innings	Runs
Bradman, D G	56	5078
Barrington, K F	40	2626
Hammond, W R	52	3440
Headley, G A	32	2064
Richards, I V A	59	3508
Lara, B C	66	3749

Source: http://www.howstat.com.au/cricket/Statistics/Batting/BattingBestAverageForPosition.asp

From observation, the statistics of which No. 3 batsman appear to be an outlier?

2. A scatter plot has been drawn for the six data points to determine if there is any association or correlation between the number of innings played and the number of runs made by these six batsmen.

Runs against No. of Innings

$r = 0.743$
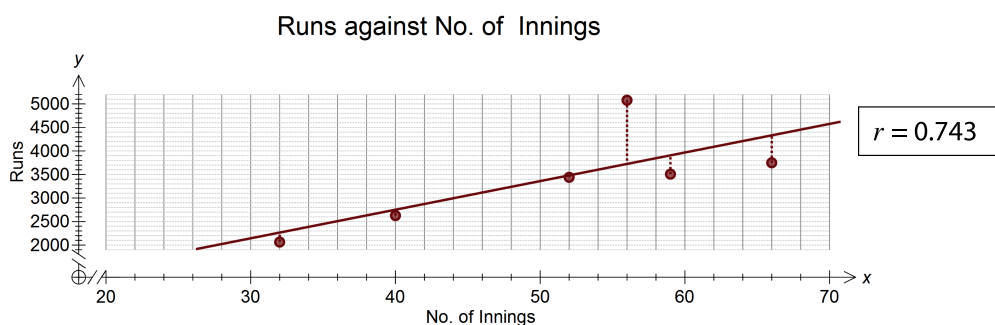
Identify an outlier in the scatter plot and determine if it is the same batsman you identified from the table of values.

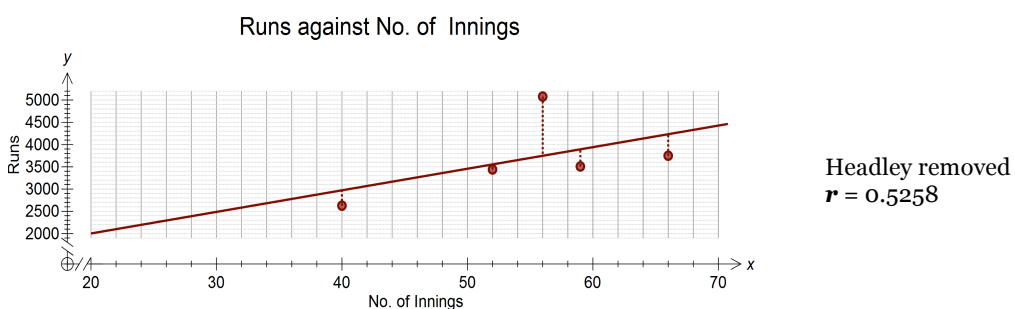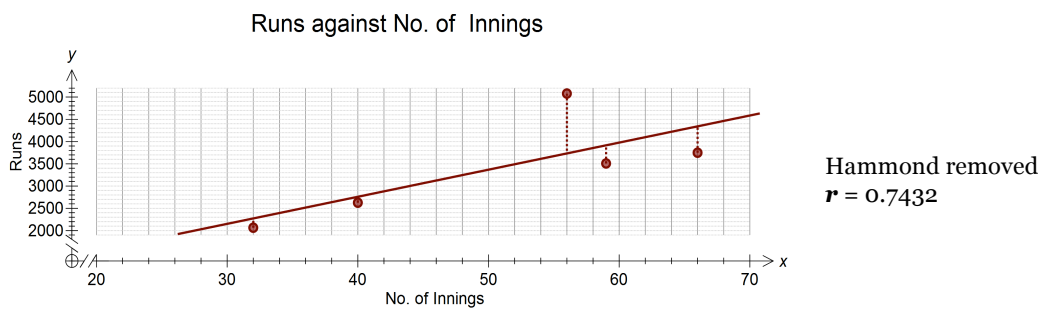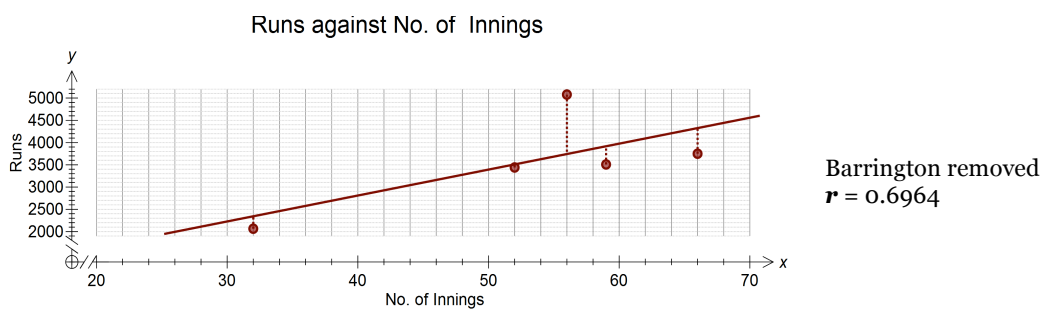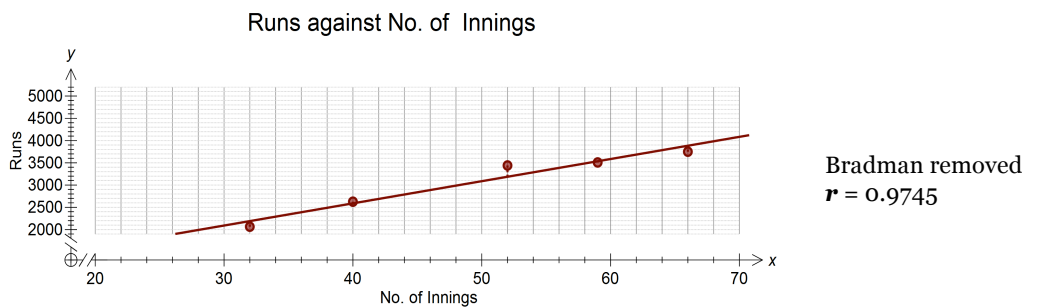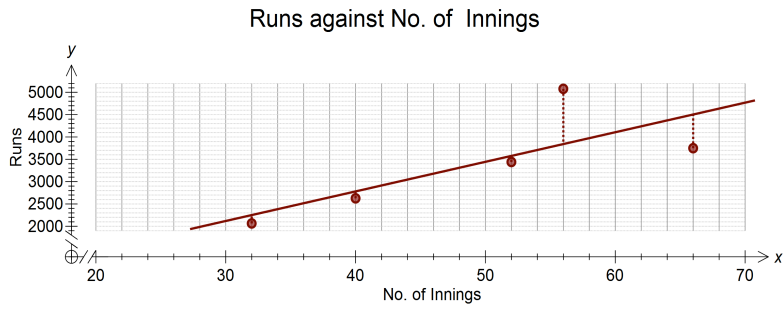3. To explore this a little further, six different graphs have been drawn. For each graph, one data point (batsman) has been removed and the correlation between number of innings and the runs made has been determined. If the correlation coefficient (*r*) improves significantly when a data point is removed, it is considered an outlier.

The *r* value indicates how well the equation models the data. The closer the *r* value is to 1, the better the fit.
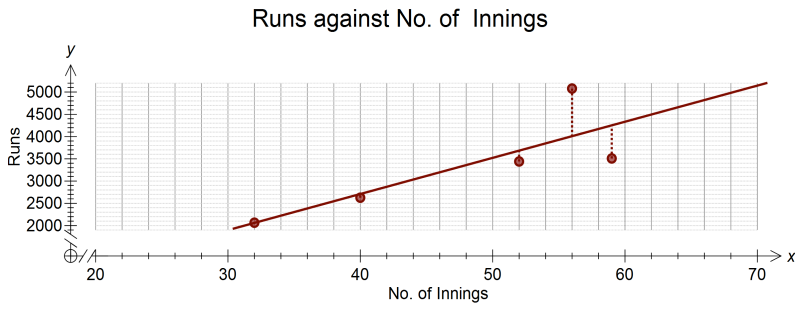
Examine the six graphs and determine which point weakened the association between the two variables the most? This will be apparent if the *r* value increases significantly when it is removed.

Is it the same point you identified by observing the values in the table?

Runs against No. of Innings

Bradman removed
r = 0.9745

Runs against No. of Innings

Barrington removed
r = 0.6964

Runs against No. of Innings

Hammond removed
r = 0.7432

Runs against No. of Innings

Headley removed
r = 0.5258

Runs against No. of Innings

Richards removed
r = 0.7688

Runs against No. of Innings

Lara removed
r = 0.8128