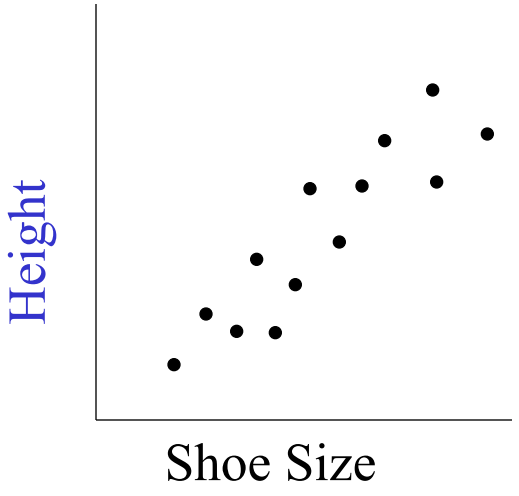
Scatter Graphs

Scatter graphs are used to show whether there is a relationship between two sets of data. The relationship between the data can be described as either:

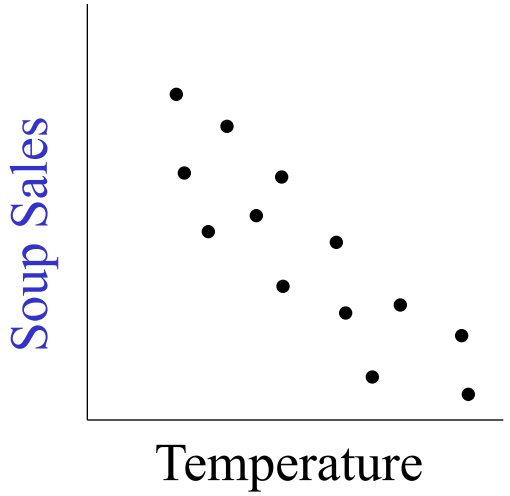
1. A positive correlation. As one quantity increases so does the other.

2. A negative correlation. As one quantity increases the other decreases.

3. No correlation. Both quantities vary with no clear relationship.



Positive Correlation



Negative correlation

No correlation

Scatter Graphs

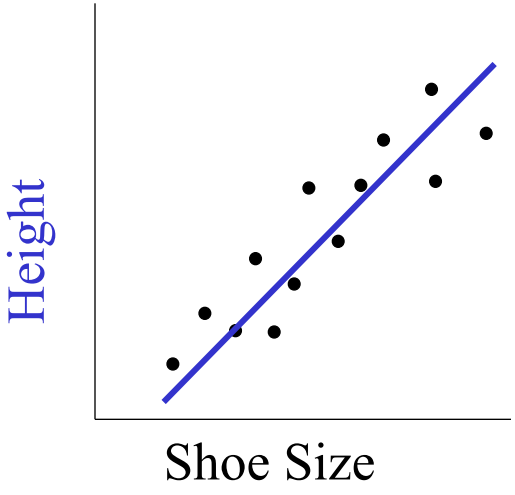
Scatter graphs are used to show whether there is a relationship between two sets of data. The relationship between the data can be described as either:

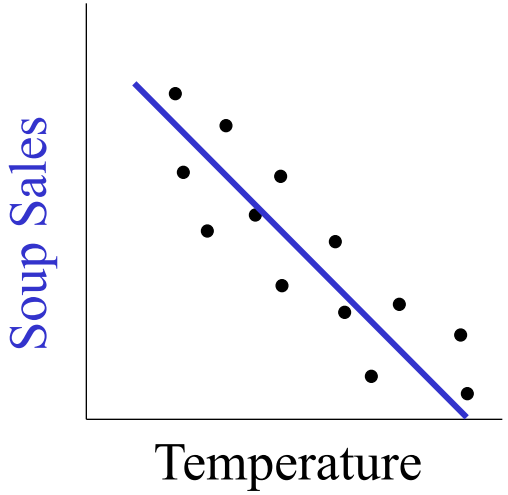
1. A positive correlation. As one quantity increases so does the other.

2. A negative correlation. As one quantity increases the other decreases.

3. No correlation. Both quantities vary with no clear relationship.

A negative correlation is characterised by a straight line with a negative gradient.

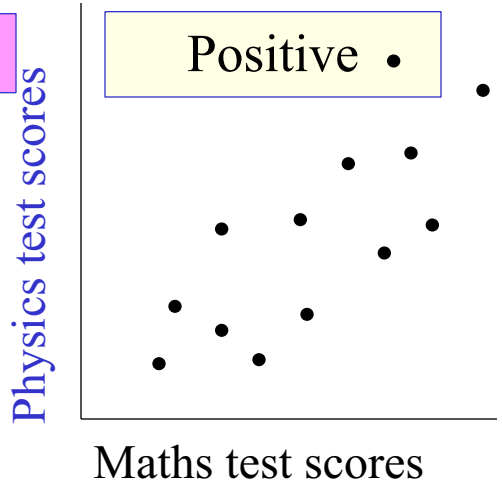




State the type of correlation for the scatter graphs below **and** write a sentence describing the relationship in each case.

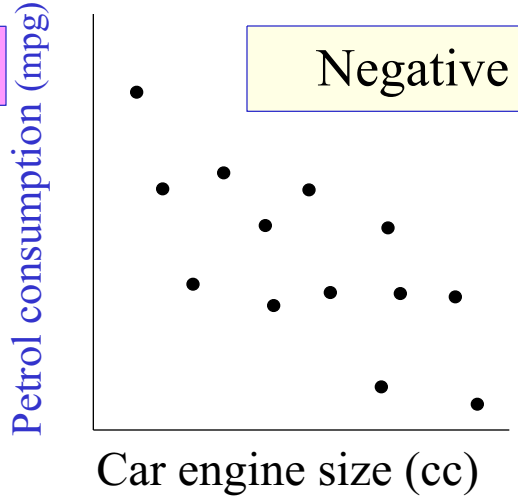
1

Positive



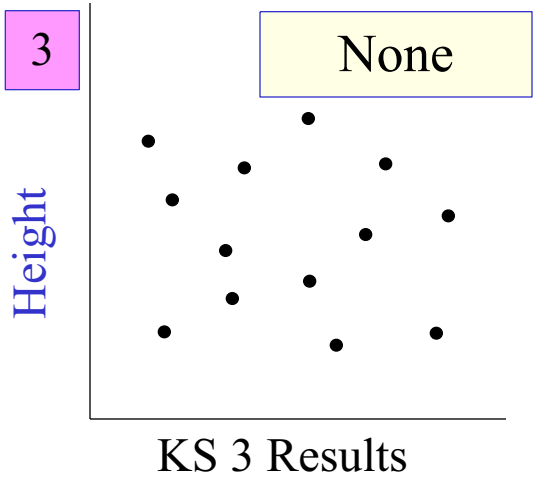
2

Negative



3

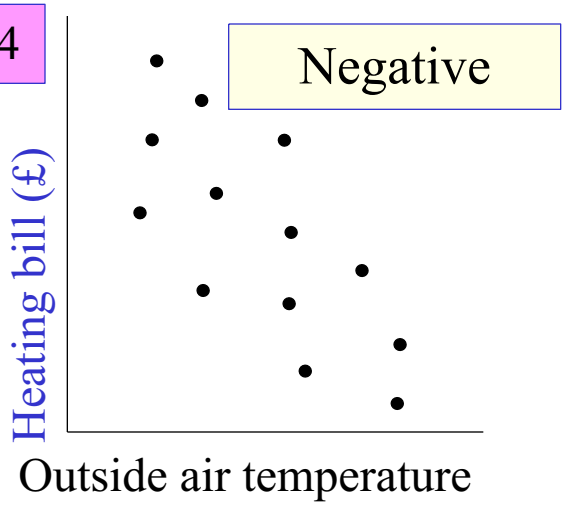
None



People tend to buy less ice cream in rainier weather.

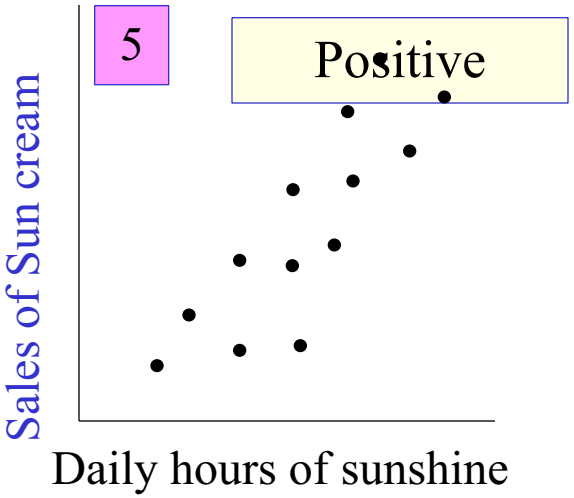
4

Negative



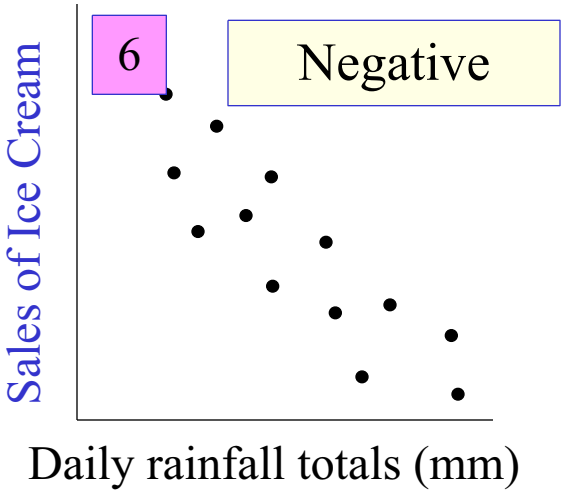
5

Positive

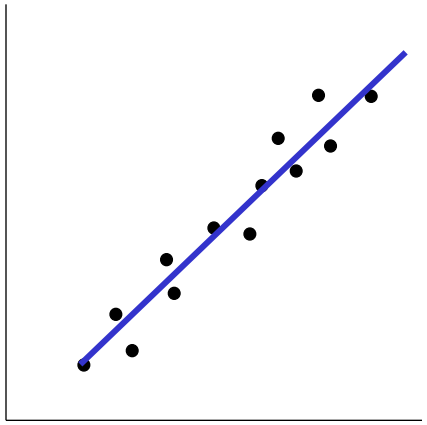


6

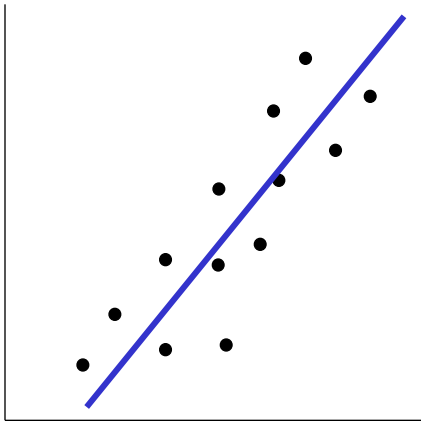
Negative



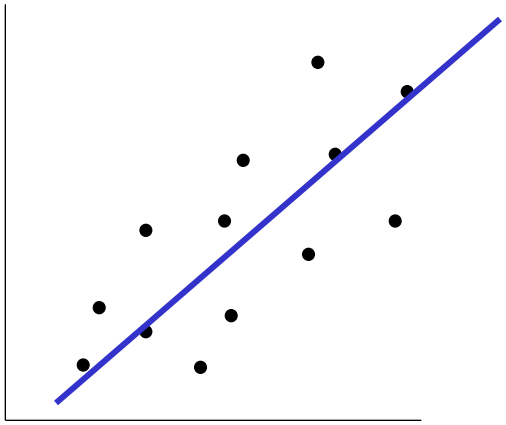
A positive or negative correlation is characterised by a straight line with a positive /negative gradient. The strength of the correlation depends on the spread of points around the imagined line.



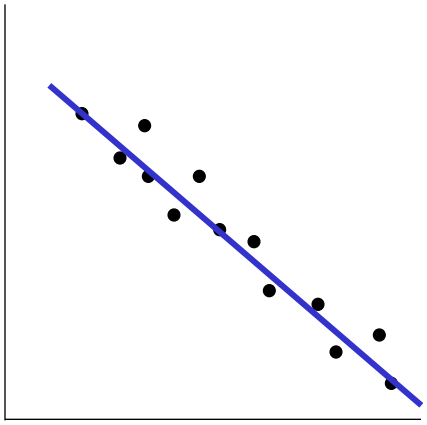
Strong Positive



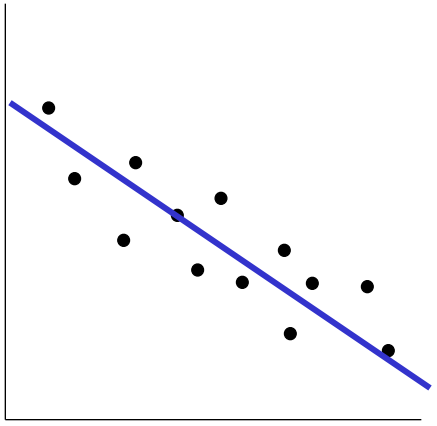
Moderate Positive



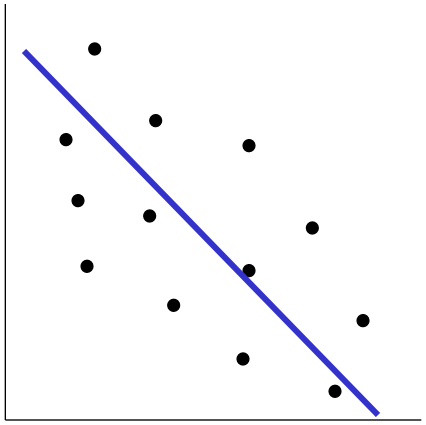
Weak Positive



Strong negative



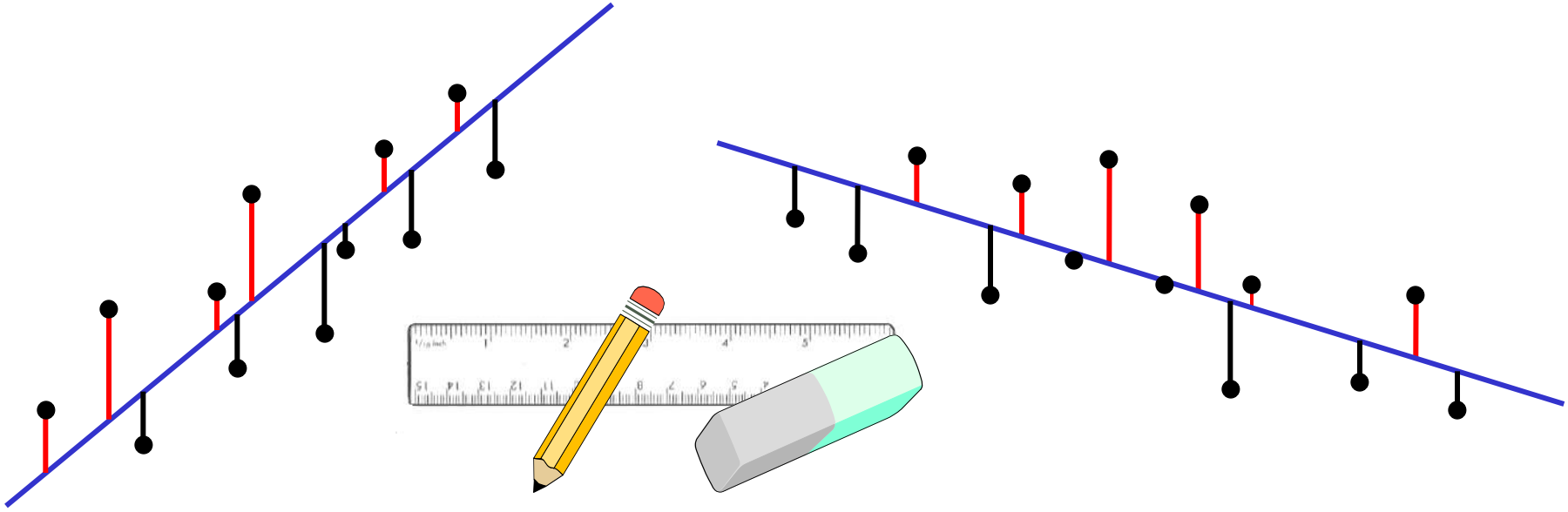
Moderate Negative



Weak negative

Drawing a Line of Best Fit

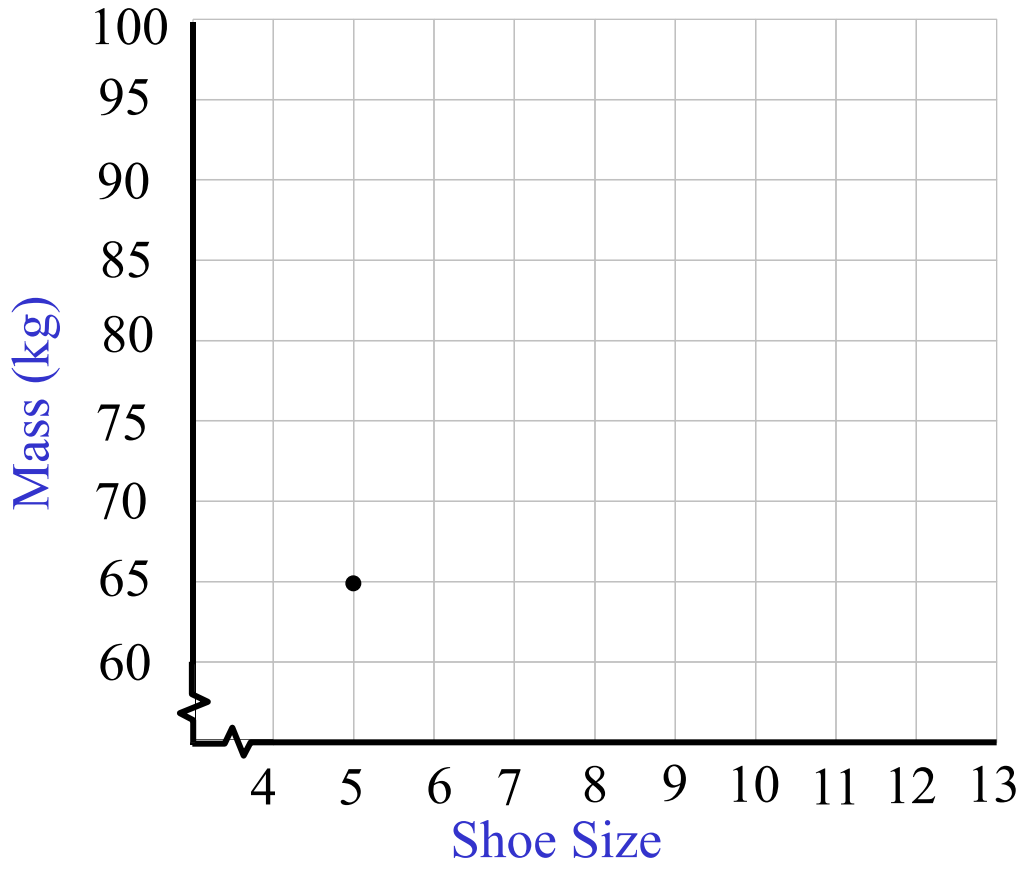
A line of best fit can be drawn to data that shows a correlation. The stronger the correlation between the data, the easier it is to draw the line. The line can be drawn by eye and should have roughly the same number of data points on either side.



The sum of the vertical distances above the line should be roughly the same as those below.

Plotting the data points/Drawing a line of best fit/Answering questions.

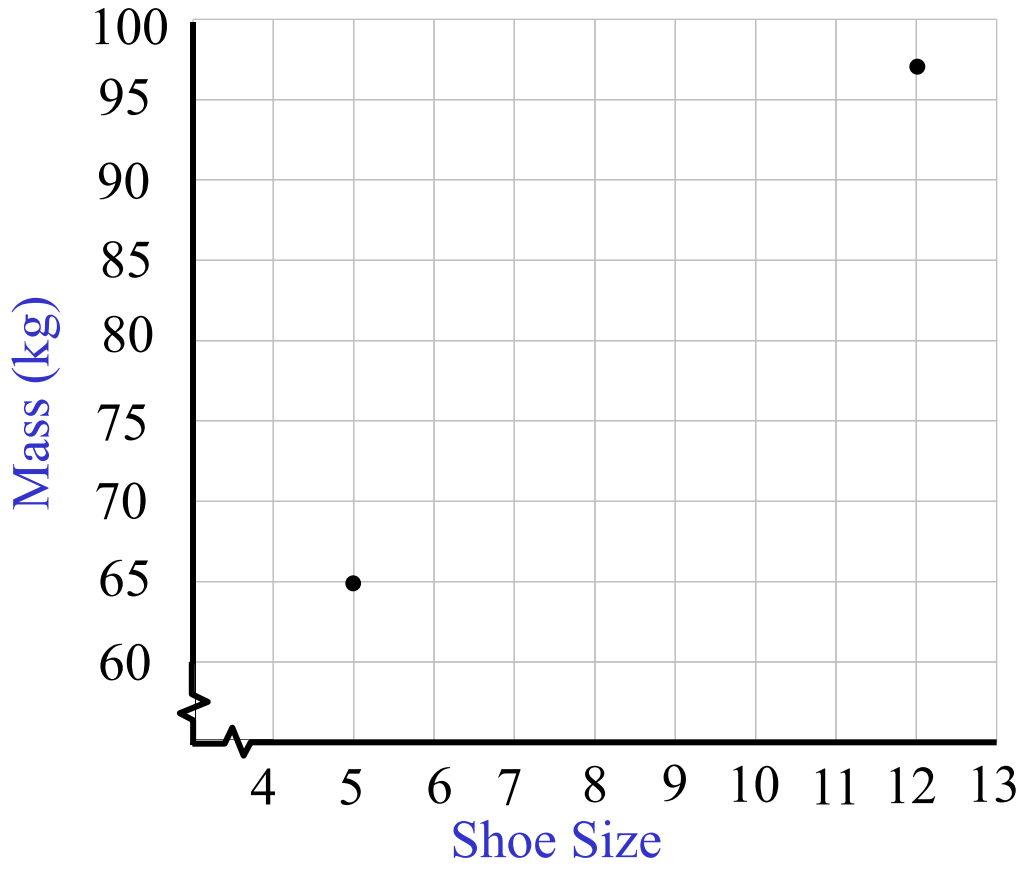
Size	5	12	7	10	10	9	8	11	6	8
Mass	65	97	68	92	78	78	76	88	74	80



(1). The table below shows the shoe size and mass of 10 men.

(a) Plot a scatter graph for this data and draw a line of best fit.

Size	5	12	7	10	10	9	8	11	6	8
Mass	65	97	68	92	78	78	76	88	74	80



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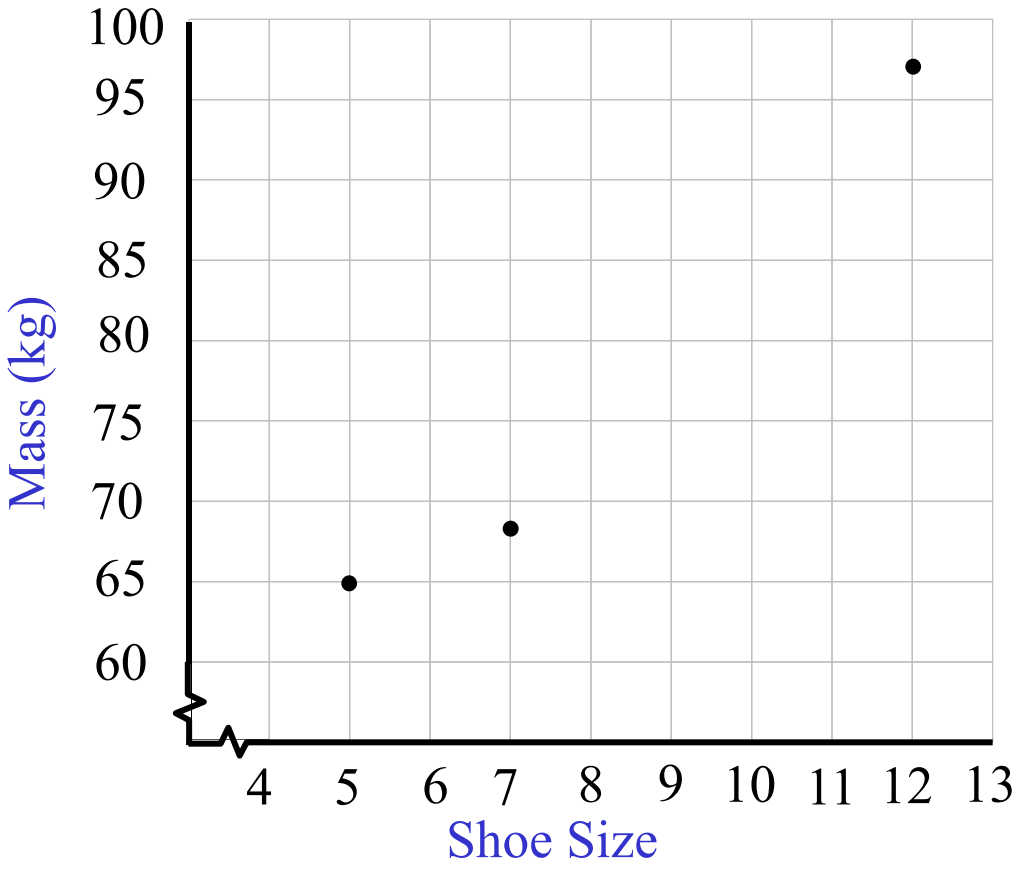

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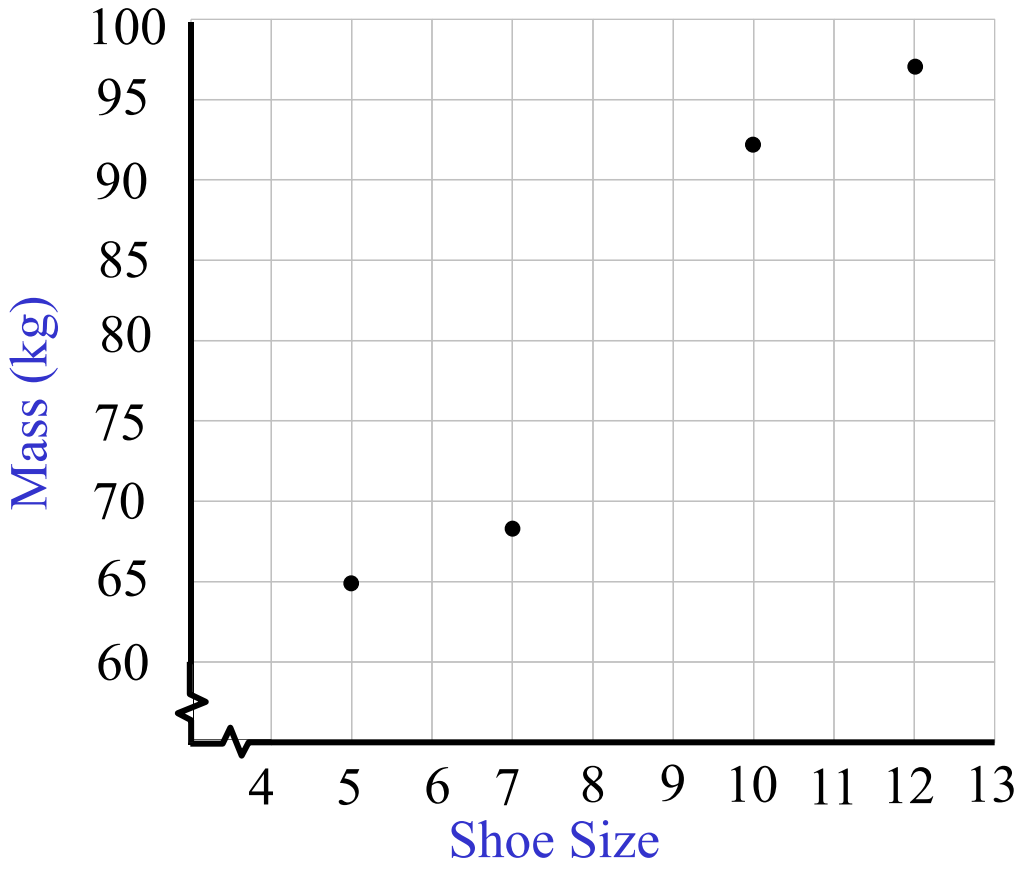

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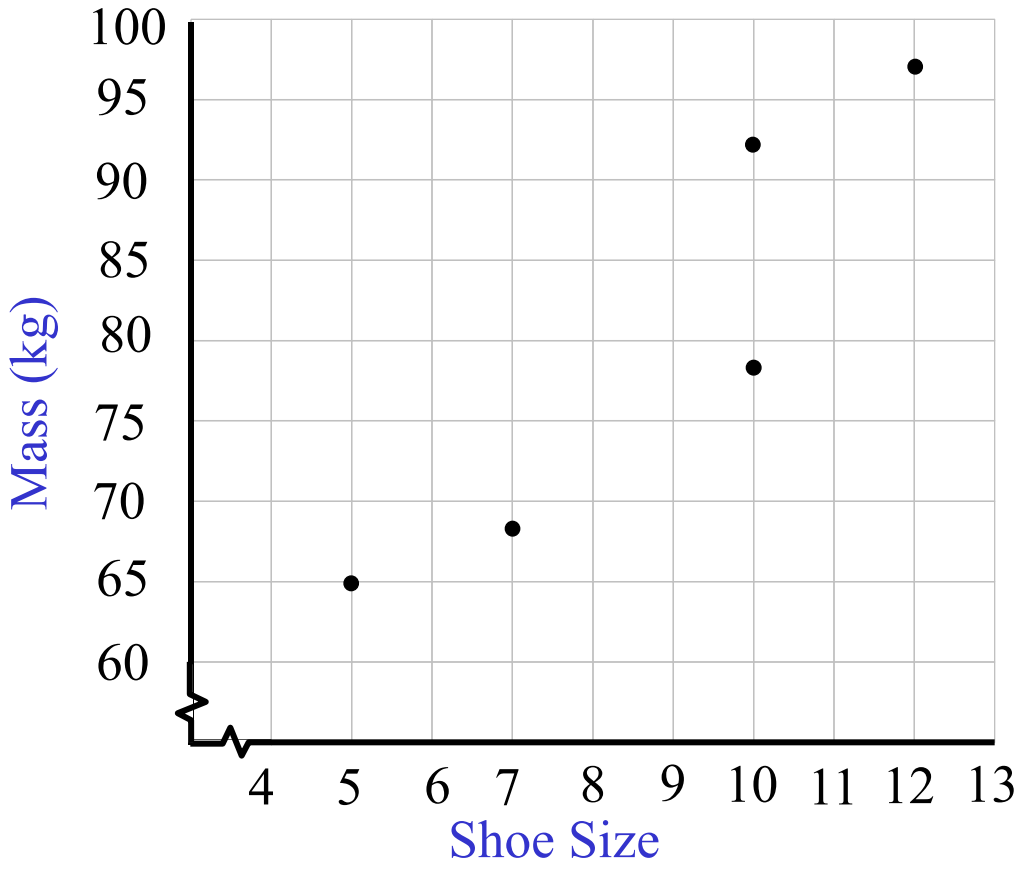
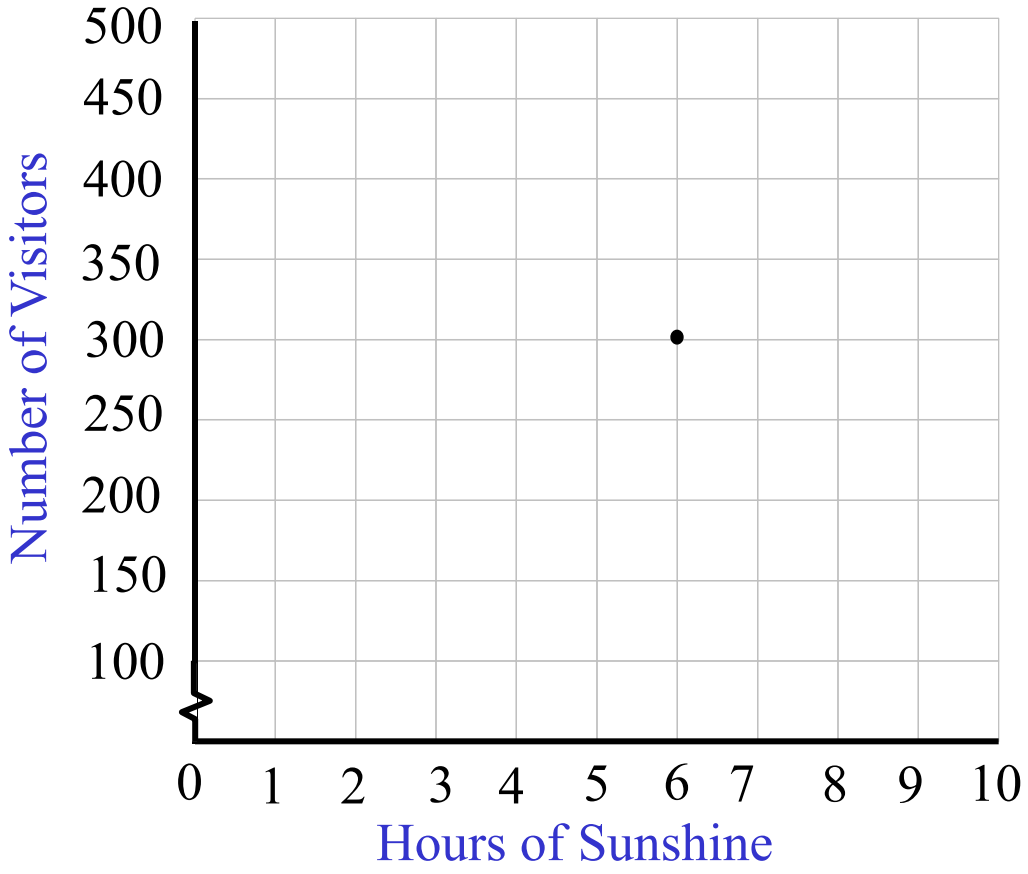


(2). The table below shows the number of people who visited a museum over a 10 day period last summer together with the daily sunshine totals.

(a) Plot a scatter graph for this data and draw a line of best fit.

Hours Sunshine	6	0.5	8	3	8	10	7	5	3	2
Visitors	300	475	100	390	200	50	175	220	350	320



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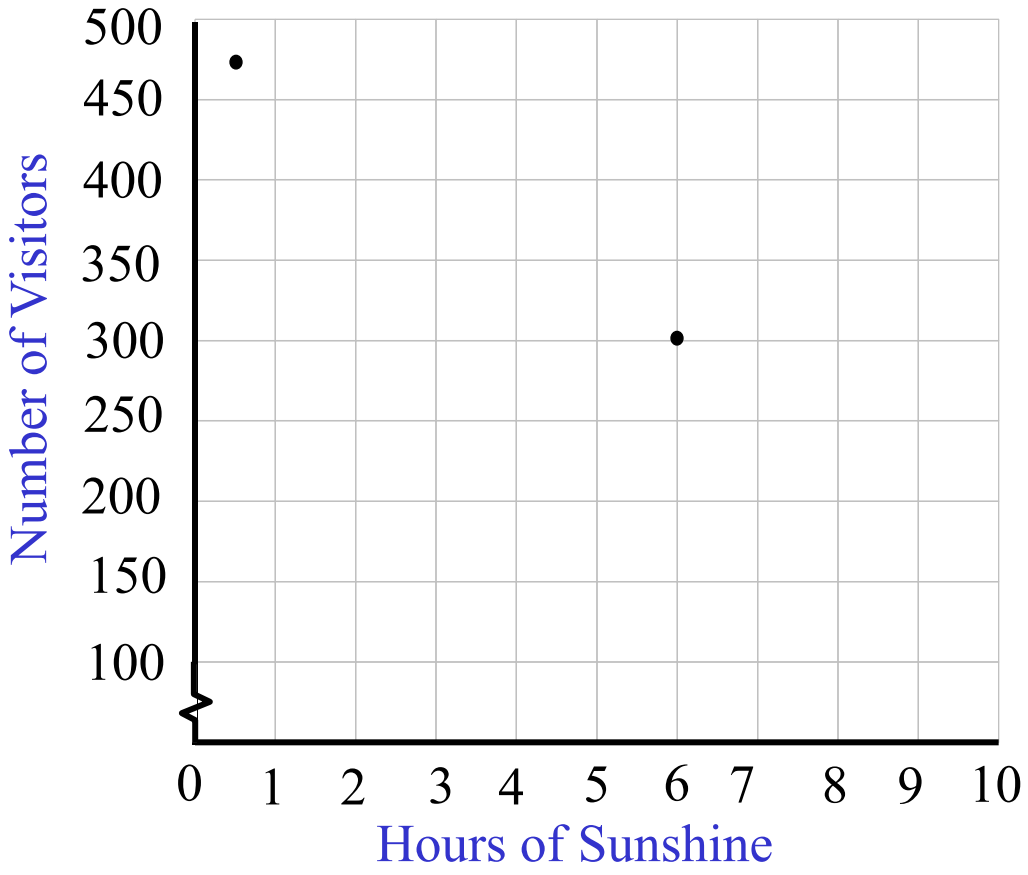

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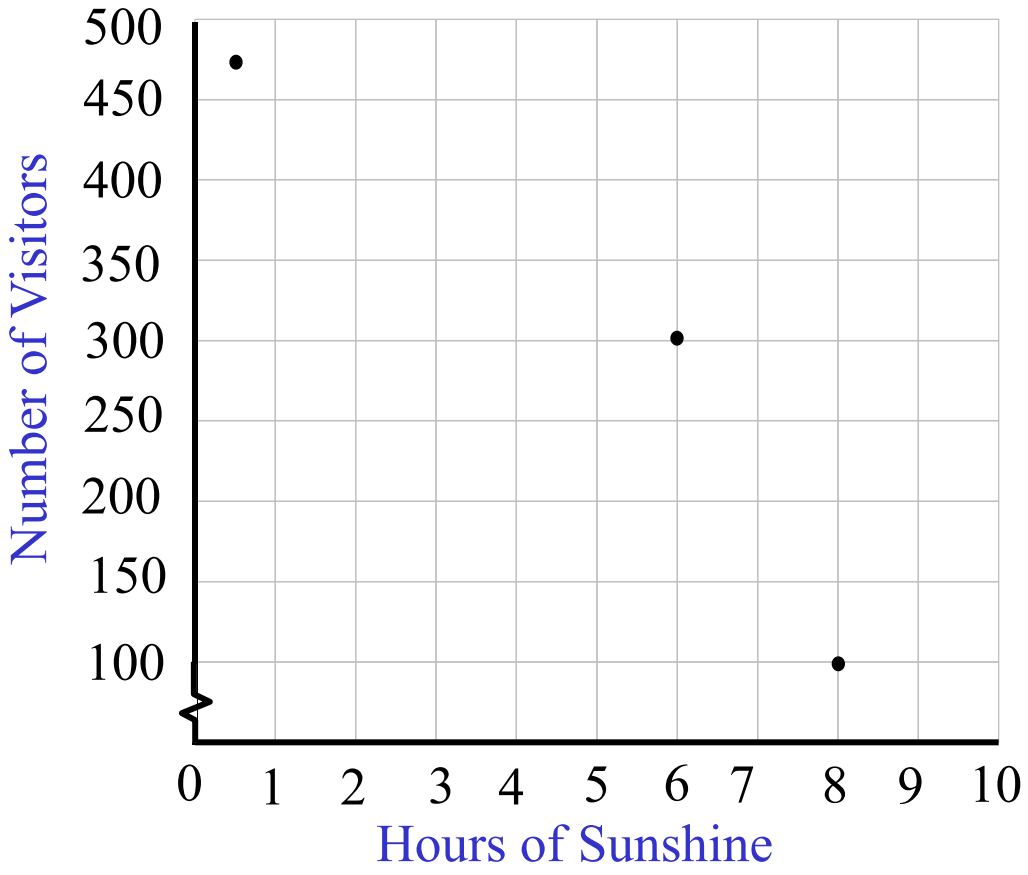

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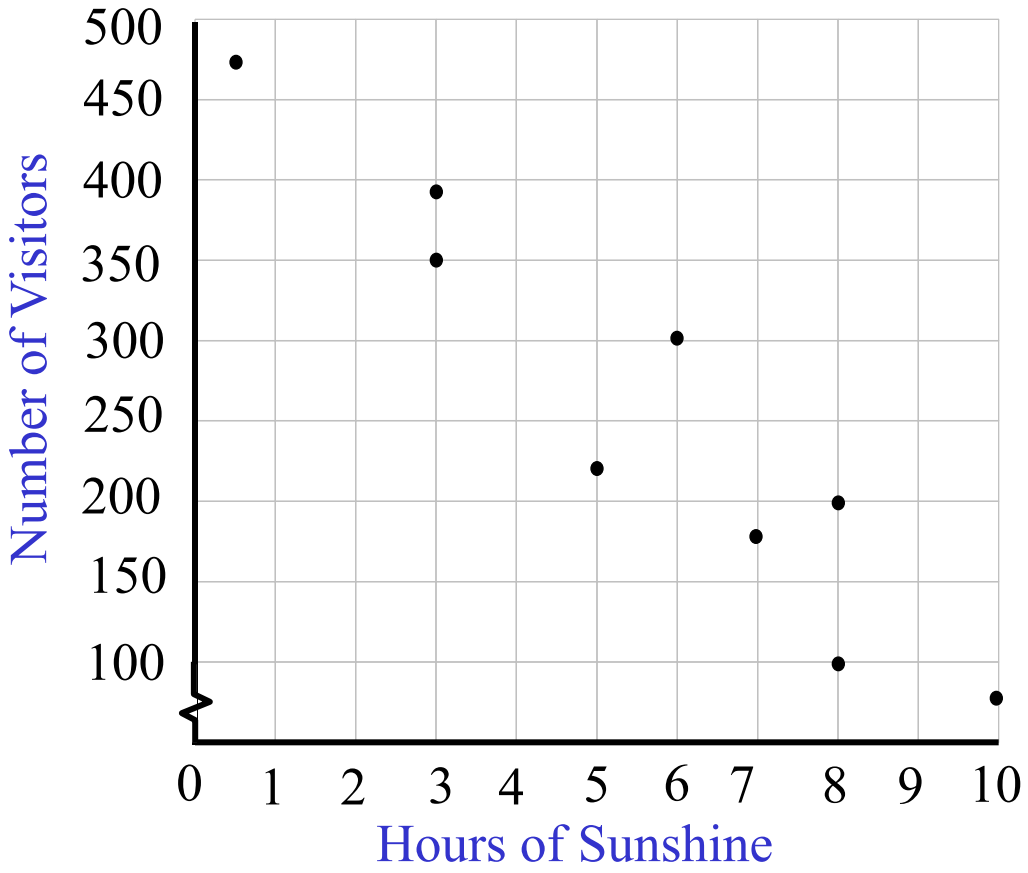

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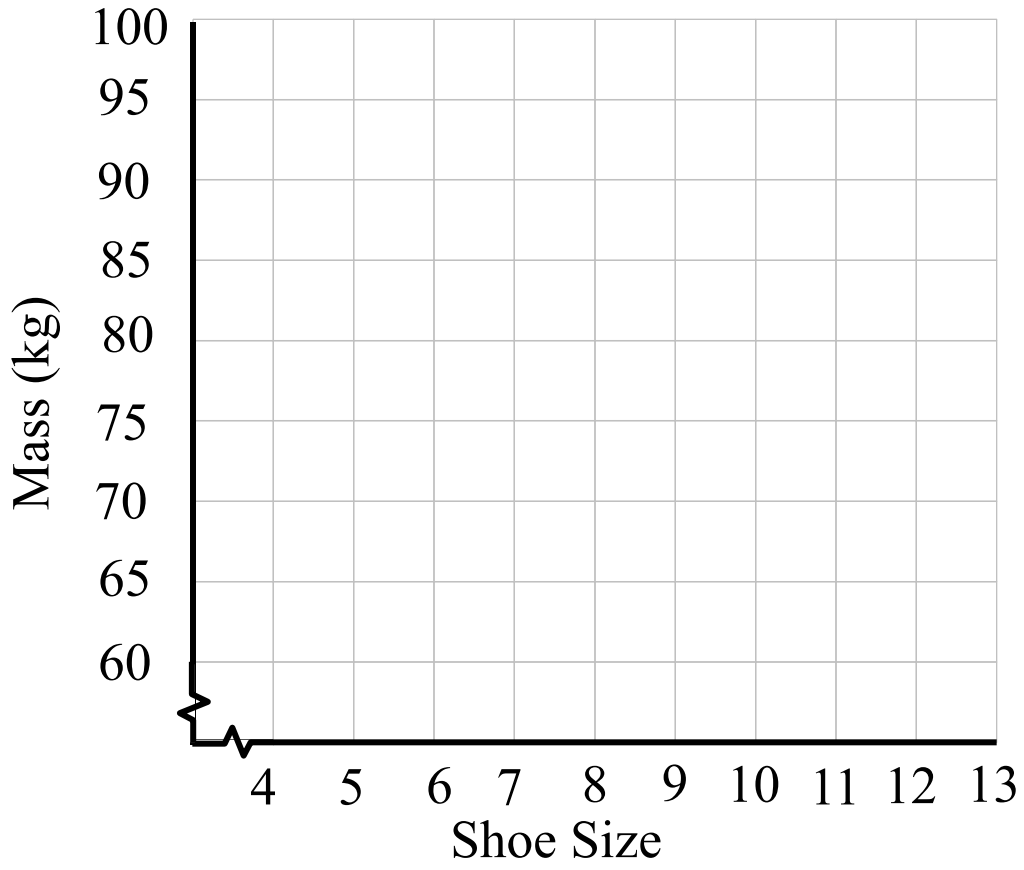

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