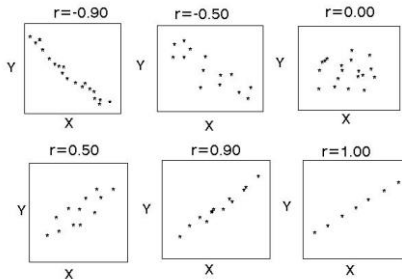


## Goals



This week:

- calculate and interpret the correlation coefficient ( $r$ ) to quantify the strength of a linear association
- identify the response variable and the explanatory variable
- use a scatter plot to identify the nature of the relationship between variables
- use the coefficient of determination to assess the strength of a linear association in terms of the explained variation
- recognise that an observation association between two variables does not necessarily mean that there is a causal relationship between them
- identify possible non-causal explanations for an association, including coincidence and confounding due to a common response to another variable, and communicate these explanations in a systematic and concise manner
- implement the statistical investigation process to answer questions that involve identifying, analysing and describing associations between two categorical variables or between two numerical variables; for example, is there an association between attitude to capital punishment (agree with, no opinion, disagree with) and sex (male, female)? is there an association between height and foot length?

## Theoretical Components

### Resources:

For this week the theory work is in the *PDF file*:  
Week 3 Notes & Exercises

Correlation vs causation

<https://www.youtube.com/watch?v=VMUQSMFGBD>  
[o](#)

Coefficient of determination

<https://www.youtube.com/watch?v=qQMAjsOihYc>

### Knowledge Checklist

- Scatter plots
- Median
- Interpreting correlation coefficients
- Correlation and causation
- Coefficient of determination
- Variation in a variable

## Practical Components

There are questions to be answered in the booklet  
*Week 3 Notes & Exercises*

## Investigation

On HawkerMaths and attached to this week's work

On-line Quiz

None