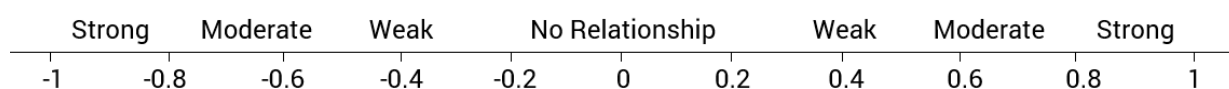


Part 4.3: Relationship

The statement about the relationship is about justifying the strength of the trend that **you can see** on your graph. It is important that you are commenting on what **you can see**. You can use the correlation coefficient (r-value) to **back up** your strength statement, but it should only be used as a backup... **what you can see** is the most important.

The r-value is a number between -1 and 1 indicating how strong the relationship is. The closer it is to 1 or -1 the stronger the relationship is, and the closer it is to zero the weaker the relationship is. A positive r-value indicates that the trend is positive, a negative r-value indicated the trend is negative.

The number line below is **just a guide**, remember what you can see with your eyes is most important.



Discuss the relationship for each of the sets of data, the first one has been done for you.

| | |
|---|--|
| <p>1. Fuel Efficiency by Weight</p> <p>Made with NZGrapher www.mathsnz.com</p> | <p>The relationship is strong and linear as I can see most the points form a fairly consistent pattern. This is confirmed by the correlation coefficient of -0.8431, indicating that the linear relationship is quite strong as r is between -0.75 and -1.</p> |
| <p>2. Marathon Time by Stride Length</p> <p>Made with NZGrapher www.mathsnz.com</p> | |

3. Rugby Players Weight by Height



4. Babies Birth Weight by Mother's Age



5. Fuel Efficiency by Engine Size



6. Diamond Price by Size

