**Graphing Relationships**

THIS IS A **TABLE OF VALUES**

|  |  |
| --- | --- |
| Age | Number of Siblings |
| 15 | 1 |
| 15 | 6 |
| 14 | 8 |
| 37 | 1 |
| 34 | 1 |
| 18 | 3 |
| 17 | 5 |
| 18 | 4 |
| 20 | 15 |

THIS IS A **SCATTER PLOT**

**CORRELATION:**

**(see the last page)**

What is the **vertical** scale jumping by?

□

What is the **horizontal** scale jumping by?

□

Is there a relationship between age and number of siblings? \_\_\_\_\_

How can you tell?

The first column is the The second column is the

**horizontal** axis. **vertical** axis.

|  |  |
| --- | --- |
| Age | Number of Years Until Retirement |
| 15 | 50 |
| 14 | 51 |
| 37 | 28 |
| 34 | 31 |
| 18 | 47 |
| 17 | 48 |
| 20 | 45 |
| 16 | 49 |
| 19 | 46 |

**CORRELATION:**

**(see the last page)**

**LABEL** YOUR **AXES!**

What is the **vertical** scale jumping by?

□

What is the **horizontal** scale jumping by?

□

Is there a relationship between the age and number of year? \_\_\_\_\_\_

How can you tell? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe the relationship: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Should you draw a **line** or **curve of best fit**? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Draw it.

Is the data **linear** or **non-linear**?

|  |  |
| --- | --- |
| Age | Number of Years Older than Rachel Thangaraj (she is seven (7)!) |
| 14 |  |
| 15 |  |
| 16 |  |
| 17 |  |
| 18 |  |
| 19 |  |
| 20 |  |
| 37 |  |

**CORRELATION:**

**(see the last page)**

What is the **vertical** scale jumping by?

□

What is the **horizontal** scale jumping by?

□

**LABEL** YOUR **AXES!**

Is there a relationship between the age and number of year? \_\_\_\_\_\_

How can you tell? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe the **relationship**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Should you draw a **line** or **curve of best fit**? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Draw it.

Is the data **linear** or **non-linear**?

|  |  |
| --- | --- |
| Time (seconds) | Height of the Ball (metres) |
| 0.5 | 5 |
| 1 | 7 |
| 1.5 | 10.5 |
| 2 | 12 |
| 2.5 | 12.5 |
| 3 | 12 |
| 4 | 7 |
| 4.75 | 2 |

**LABEL** YOUR **AXES!**

**CORRELATION:**

**(see the last page)**

What is the **vertical** scale jumping by?

□

What is the **horizontal** scale jumping by?

□

Is there a relationship between the age and number of year? \_\_\_\_\_\_

How can you tell? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Describe the **relationship**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Should you draw a **line** or **curve of best fit**? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Draw it.

Is the data **linear** or **non-linear**?

**Correlation**

|  |  |
| --- | --- |
| **Positive Correlation** | **Negative Correlation** |
| **Perfect Positive Correlation** | **Perfect Negative Correlation** |
| **Strong Positive Correlation** | **Strong Negative Correlation** |
| **Weak Positive Correlation** | **Weak Negative Correlation** |
|  **No Correlation** |

**Making Predictions based on our graphs** - Use your lines/curves of best fit!

1. Can you **predict** how many **siblings** a **30-year-old man** will have from graph 1?

2. Can you **predict** how many **years until retirement** it is for **a person who is 25** from graph 2?

3. Can you **predict** how many **years until retirement** it is for **a person who is 10** from graph 2?

4. Can you **predict** the **age** of someone who will **retire in 40 years** from graph 2?

5. Can you **predict** how many **years older than Rachel** is a **person who is** **30** from graph 3?

6. Can you **predict** the **age** of someone is who **25 years older than Rachel** from graph 3?

7. Can you **predict** how many **years older than Rachel** is a **person who is** **40** from graph 3?

8. Can you **predict** the **height** of the ball after **2.5 seconds** from graph 4?

**Interpolation:** When you make predictions within **(inside)** the scatter plot points.

**Extrapolation:** When you make predictions **outside** of the scatter plot points