Correlation vs Causation Worksheet

1. Define Correlation:
2. Define Causation:
3. A study shows a relationship between carbon dioxide levels and obesity. Do you think this is a correlation or causation?
4. What factors might have created this relationship?

A study tells us that there is a relationship between watching violent TV and kids committing acts of violence themselves. The study gives the following data table:

<table>
<thead>
<tr>
<th>Average hours of TV watched per week</th>
<th>2</th>
<th>4</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of acts of violence</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>committed</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Make a graph of the data.

6. Write the matching equation:

7. Do you think there is a causal relationship between these two variables or is it just a correlation?

8. Give a reason for why this is an example of causation or just correlation.

A study tells us that there is a relationship between Eating chocolate and having acne. The study gives the following equation showing the relationship: \( y=2x +2 \) where \( y \) is the number of instances of reported acne and \( x \) is chocolate bars eaten.

9. Make a data table that relates to the equation:

| Chocolate bars | | |
|----------------|---|
| Instances of acne | | |
10. Make a graph of the data.

A study tells us that there is a relationship between average annual income and arrest for illegal drug use. The study gives us the following data:

<table>
<thead>
<tr>
<th>Average annual income ($ per year)</th>
<th>20,000</th>
<th>50,000</th>
<th>60,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average arrests for illegal drug use</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

11. Write the matching equation:

12. Do you think there is a causal relationship between these two variables or is it just a correlation?

13. Give a reason for why this is an example of causation or just correlation.

14. Make a graph of the data.

15. Write the matching equation:

16. Do you think there is a causal relationship between these two variables or is it just a correlation?

17. Give a reason for why this is an example of causation or just correlation.
Create your own study of a relationship that might have a correlation or even causation.

18. Describe the study and the relationship:

19. Create a linear graph showing the relationship:

20. Write the equation that matches the graph.

21. Do you think there is a causal relationship between these two variables or is it just a correlation?

22. Give a reason for why this is an example of causation or just correlation.