**Shark Attack Worksheet**

**Shark Attacks**

Did you know that selling ice cream causes shark attacks?

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| Month | Ice CreamSales ($) | Number ofShark attacks |
| January | 430 | 5 |
| February | 570 | 13 |
| March | 810 | 36 |
| April | 940 | 61 |
| May | 1100 | 47 |
| June | 1240 | 58 |
| July | 1340 | 73 |
| August | 1390 | 84 |
| September | 1240 | 95 |
| October | 1030 | 68 |
| November | 810 | 43 |
| December | 430 | 10 |

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| (Source: <http://www.flmnh.ufl.edu/fish/sharks/statistics/FLmonthattacks.htm>) |

1. Draw the trend line in the graph provided.
2. How would you describe the correlation between ice cream sales and shark attacks?
3. In case there are any nay-sayers still in the room, use the graphing calculator to calculate the correlation coefficient, *r*.
4. Complete the statement below:

“This means that the more people buy ice cream, the

1. Does this mean that buying more ice cream causes shark attacks?

**Car Accidents**

Let’s try another example that will help separate correlation from causation. The table contains records on the number of car accidents compared to the amount of snow fall for the town of Rocky Hill.

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| Inches of Snow | 0 | 1.5 | 4 | 5 | 0.5 | 7 | 12 | 4 | 1.5 | 2.5 | 5.5 | 5.5 | 9 | 3 | 4.5 |
| Accidents | 2 | 5 | 6 | 5 | 1 | 10 | 15 | 3 | 5 | 2 | 6 | 7 | 11 | 4 | 8 |

1. Use the graphing calculator to calculate the correlation coefficient, *r*.
2. Does this mean that more snow on the ground causes accidents? Explain your reasoning.

Here are four more examples to practice identifying the difference between correlation and causation.

1. The shorter the time someone holds a driver’s license, the more likely she is to have an accident. Therefore, new drivers cause more accidents. True/False? Why?
2. The younger a driver is, the higher his or her car insurance premiums. Therefore, young age causes high premiums. True/False? Why?
3. Increase of flu is correlated with lower outside temperature. Therefore, cold temperatures cause flu. True/False? Why?
4. Higher incidence of lung and mouth cancer is correlated with increased use of tobacco products. Therefore, tobacco causes cancer. True/False? Why?