Name:_____ Period:_____

Score:____/____

_____% = _____

HW 7-7 HONORS: Causation

1. Mr. Jones gave a math test to all the students in his school (grades 1-12). He made the startling discovery that the taller students did better than the shorter ones. His conclusion was that as your height increases, so does your math ability.

Does this imply causation? No

Are there any hidden variables that impact your decision regarding causation? If so, describe some of them. Age/Grade. The older students are taller but are better at math. That's why they scored better.

2. Danny is a truck driver for a construction company. The staff at the warehouse loads up his truck with flats of cement bricks while the truck is parked on a scale. They consider the eight of the truck as additional flats of bricks are added to the truck. There is a strong positive relationship between the number of flats loaded onto the truck and the weight of the truck.

Does this imply causation?

Are there any hidden variables that impact your decision regarding causation? If so, describe some of them.

3. There is a strong positive correlation between ice cream sales and shark attacks. As ice cream sales increase, the number of shark attacks increase.

Is it reasonable to conclude that ice cream consumption causes shark attacks? Why or why not.

Women's Olympic High Jump Record

	Year	Distance(cm)
2	1932	165
6	1936	160
18	1948	168
22	1952	167
26	1956	176
30	1960	185
34	1964	190
38	1968	182
42	1972	192
46	1976	193
50	1980	197
58	1988	203
62	1992	202
66	1996	205

Let x be the years since 1930.

4. Create a scatter plot on the graph provided. Label your axes.

Calculator Needed

5. Find and interpret the correlation coefficient.

0.96 very strong & positive

6. Find the equation of the linear regression line.

7. What is the slope? What does it mean in the context of the situation?

0.74 Each year the high jump record increased by 0.74 cm

8. What is the y-intercept? What does it mean in the context of the situation

9. In 2005 what would you predict the Women's Olympic high jump record to be?

approx 213.67 cm

10. Approximately what year will the women's record reach 212 cm?

11. Are the year and the women's high jump record correlated?

Yes

12. Is there causation between the year and the record?