Bike Weights and Jump Heights

NAME _____

1. In BMX dirt-bike racing, jumping high or "getting air" depends on many factors: the rider's skill, the angle of the jump, and the weight of the bike. Here are data about the maximum height for various bike weights.

WEIGHT (pounds)	HEIGHT (inches)
19	10.35
19.5	10.3
20	10.25
20.5	10.2
21	10.1
22	9.85
22.5	9.8
23	9.79
23.5	9.7
24	9.6

Use grid paper to plot the data (weight, height). If the data are linear, draw a trend or best-fit line.

2. Is there a positive, negative, or no relationship between bike weight and jump height? Explain your answer.

3. As the weight increases, the height _____.

4. Find the slope or rate of change. What does this mean in words?

5. Predict the maximum height for a bike that weighs 21.5 pounds if all other factors are held constant.

Winning Times

NAME _____

The table lists the winning times for the women's 400-meter freestyle swim for the Olympics.

Year	Time (min:sec.)
1924	06:02.2
1928	05:42.8
1932	05:28.5
1936	05:26.4
1948	05:17.8
1952	05:12.1
1956	04:54.6
1960	04:50.6
1964	04:43.3
1968	04:31.3
1972	04:19.0
1976	04:09.9
1980	04:08.8
1984	04:07.1

1. Using 1920 as the base year, plot the data (year, time).

2. Construct a best-fit line.

3. What is the slope, and what does it mean?

4. Write the equation of the line. Use the line to predict what the times might have been if the Olympics had been held in 1940 and 1944.

5. Is it reasonable to use this line to predict the winning time for the 1988 Summer Games? Why or why not?

6. Look up the winning time for the 400-meter freestyle swim in the 1988 Summer Games and compare it to the time predicted by the best-fit line.