

# 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.

7. Use a graphing calculator to find the equation of the regression line.