

# Height of gold medalist research



**ASSIGN  
BUSTER**

## Purpose of Investigation

The purpose of this investigation is to find out the general trends of the Olympic gold medal height each time the event is held. It also could be used to predict the next gold medal height in the upcoming Olympic events. We could know as well what functions can be used to plot the graphs. People could also analyze the pattern of rising or decrease in height of the winning height in the Olympic game. This investigation also allows future participants to find out information about previous gold medal heights and can make them easier to set targets for their performance in the Olympic Games.

a. The function I used for constructing this graph is Gaussian. Because from the list of functions in the graph-constructing program, the Gaussian function is the most accurate shape when plotted according to the data given which is the statistics of the height of gold medalist for men's high jump in the Olympic. The technology I used to plot all the graphs is Logger Pro 3.50.

b. The difference is not significant after I adjust it. It can be seen from the graph itself that the shape of it is also similar. The limitation is that it is plotted on lower values compared to the original and so it couldn't reach the 1980 mark like the original graph.

c. With the technology I used, the function I find to have a similar shape is the cubic function which is the red line. There is some period that the cubic function has a higher value. Also, there are some points where the two graphs meet. But in the end, the cubic is lower than the original and couldn't reach the 1980 mark.

d. According to the original graph, if in the years 1940 and 1944, the estimated height will be 198.2 and 199.6 respectively.

e. Estimated winning heights in 2004 and 2016 are 235 and 241 respectively. From the data, the winning height generally tends to rise from year to year the Olympic is held. The estimated winning heights are obtained from the graph until the year 2016.

f. My model fits well with the additional data. However, there are some points that the graph doesn't reach according to the additional data given.

g. The overall trend from 1896 up to 2008 is that the gold medal height rises from year to year, although there are some years that the gold medal height fall compared to the previous Olympic event which are in the years 1896 to 1904, 1936 to 1948, 1968 to 1972, 1988 to 1992, and 1996 to 2000.

h. No modifications are required are needed to fit my model into the new data.