

Award Winning Data



Student Activity

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TI-Nspire™



Investigation



Student



50 min

Introduction

Arguably the world's most famous award ceremony are the Academy Awards®. Commencing in May 1928, Pricewaterhouse has managed the awards since 1935 and initiated the secrecy of the result by placing the winners name in a sealed envelope coining the phrase: "The envelope please". Are complaints about the awards simply a case of 'sour grapes' or is there evidence to suggest a level of bias. Are the awards ageist or sexist?

Past award winners include Jodie Foster (29), Gwyneth Paltrow (26), Julia Roberts (33), Dustin Hoffman (51), Jack Nicholson (60) and Denzil Washington (47). Author Sarah Sands wrote an article about Demi Moore's objection to Hollywood's bias towards younger actresses. Demi claimed that there are fewer roles for chronologically mature females than for males. Is there statistical evidence to support Demi's case?

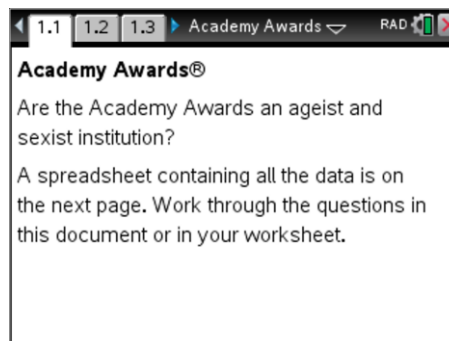
Everyone has seen images of botched cosmetic surgery. If Demi is correct in her claim it may help explain the obsession with cosmetic surgery amongst the acting fraternity, particularly female stars. Images of people portrayed in the media influence our perception of what is normal. If Hollywood and other media continually portray unrealistic, enhanced images this can alter our perception of reality. The aim of this investigation is to determine if data relating to the winners supports the ageist and sexist claim.

Introduction – Setting up the calculations

Press the **Home** key, select **My Documents** and navigate to the Academy Awards activity and open the document.

Scroll through the list of award winners on page 1.2.¹

Navigate to page 1.3 and answer the question.



To calculate the mean for the age of actors and actresses, insert a 'maths box' by pressing **Ctrl + M** in the **Answer** space.

Type the word:

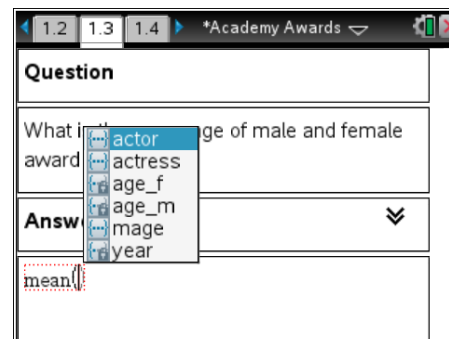
mean(

Use the **VAR** button and then enter the appropriate variable and close the parenthesis.

Variables:

age_f = Age of female winners

age_m = Age of male winners



¹ List of winners source: http://en.wikipedia.org/wiki/Academy_Award

Building Evidence

1. What is the mean age of male and female award winners?
 - a. Actor?
 - b. Actress?

Calculator Tip!



Time Saving Tip:

Use the VAR key to access variables.

Calculation Tip:

TI-nspire has many data related commands including, $\min()$, $\max()$ and $\text{mean}()$. These commands will be useful when answering the following questions.

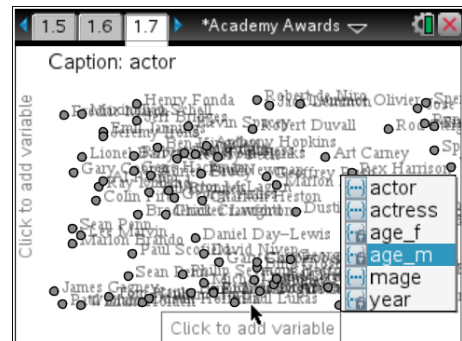
2. Who is the oldest recipient of an Academy award for best actor or actress? (Include the age)
3. Determine the range of ages for Academy Award winners.
 - a. Actor
 - b. Actress
4. Determine the median age for both male and female Academy Award winners.

Graphing the Data

Press the **Home** key, select **Data & Statistics**.

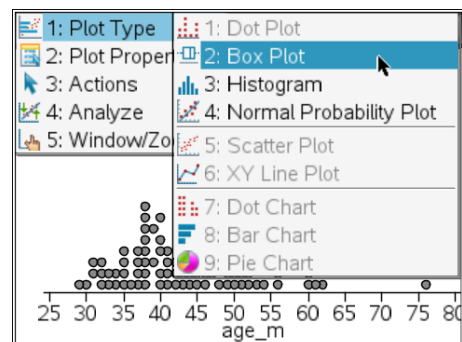
The entire data set will be scattered over the screen.

Use the **TAB** key to navigate to the x axis 'add variable' and select **age_m**.



The default graph type for data is a 'dot plot'.

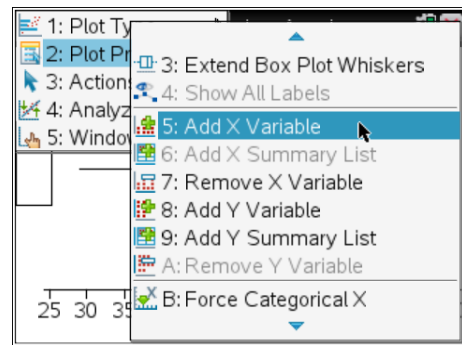
To change to a box plot, select **Plot Type** from the menu followed by **Box Plot**.



To add the female data to the graph, select **Plot Properties** followed by **Add X Variable**.

Select : **age_f**

Note: Moving the mouse over the boxplot(s) displays the various statistics relating to the boxplot.



5. Use your boxplots to answer the following questions:
 - a. Determine the age below which 75% of female award winners exist.
 - b. Determine the age above which 75% of male award winners exist.
6. Construct a histogram and categorise ages into 20's, 30's, 40's... 80's and compare this representation of the data with the boxplot. Age categories can be established using 'bin settings'. The bin settings are located in the Plot Properties > Histogram > Settings > Equal Bin Width.
 - a. What information does the histogram show better than the boxplot?
 - b. What information does the boxplot show better than the histogram?
7. Write a newspaper style article either supporting or refuting the claim that "Aging female actors are denied roles of significance and worthy of an Academy Award". Include specific and appropriate statistical references in the article to support the claim.

Further Investigation

Is there a change in attitude over recent years? Use a graph to investigate if a relationship exists between the year and age for both male and female award winners.

- a. Has there been a general increase or decrease in age for actors and actresses?
- b. Is there a strong or weak correlation?
- c. Group the data into decades, take the average for each decade and see if there is an overall trend from decade to decade.