http://topdrawer.aamt.edu.au/Statistics/Good-teaching/Data-representation/Linking-graphs-to-data-types/Melbourne-Cup-data

The Melbourne cup: Answers

This activity is based on the history of the Melbourne Cup. Students can be directed to the following sites to find out information on the history of the Cup and data on variables associated with the race.

http://www.melbournecup.com/racing/history-of-the-cup/

en.wikipedia.org/wiki/List_of_Melbourne_Cup_winners

http://www.racenet.com.au/mel/default.asp

Here is a series of questions that can be asked to differentiate the types of data collected for the race and the graphs that would represent them.

1. What are the variables associated with the Melbourne Cup that have numerical values?

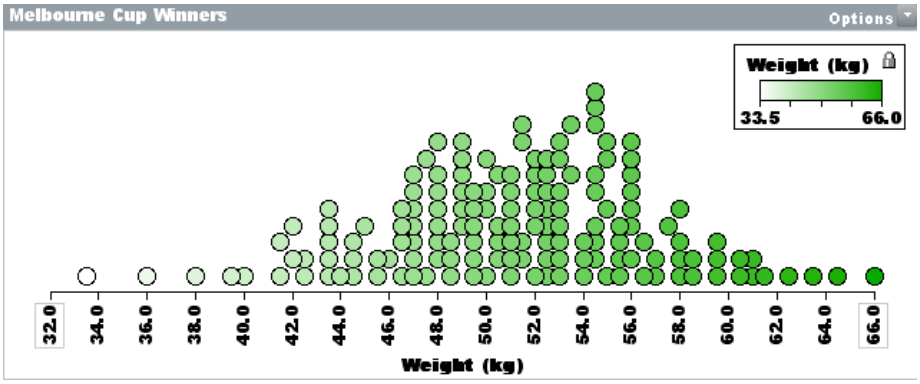
   Examples: year of the race, age of winner, number worn, the winning margin or starting price.

2. Which of the variables from question 3 are measured on scales that have equal sized units?

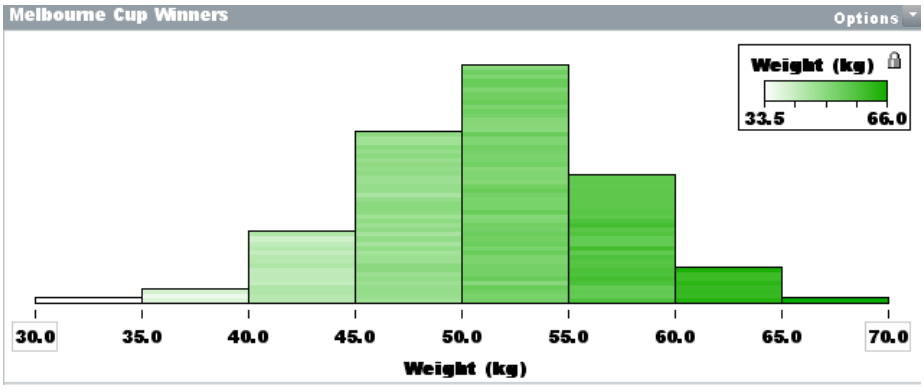
   Examples: the weight carried by the horse [kg], the winning time [seconds], age [years])

   Which types of graphs can be used to represent this type of data?

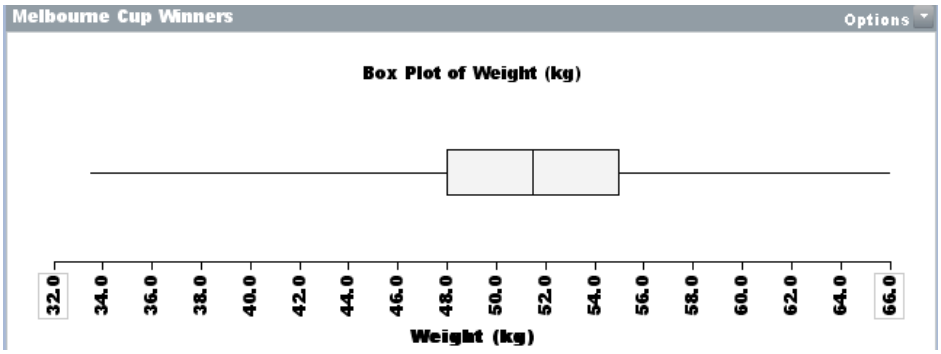
   a) *Stacked Dot Plot*



b) *Histogram*



c) *Box Plot*



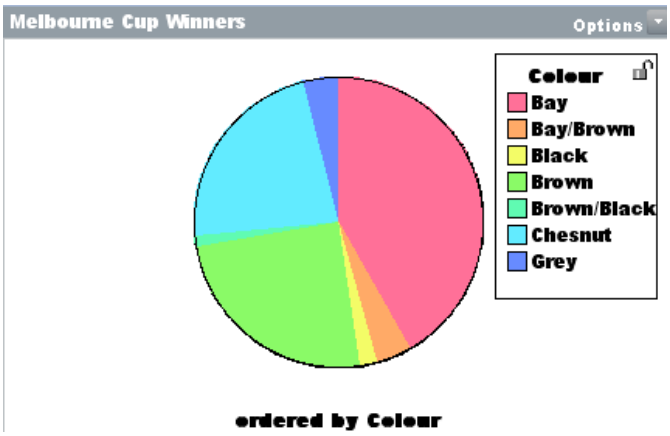
3. Which are the variables associated with the Melbourne Cup that represent categories where the values are text?

Name of horse, name of jockey, name of trainer, colour and sex of horse.

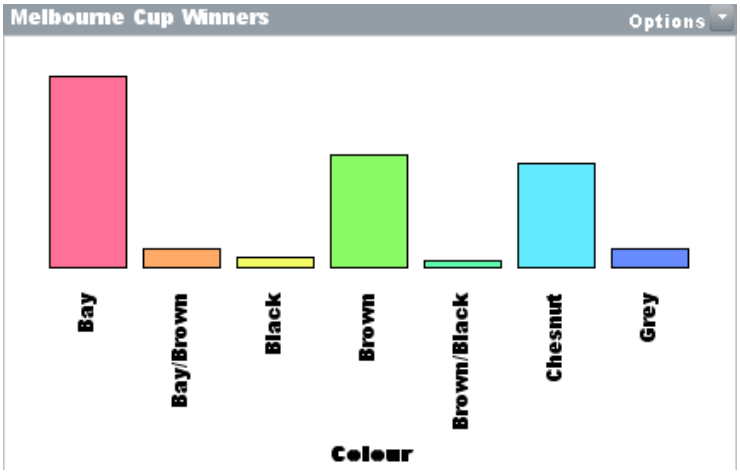
(see next page)

4. What types of graphs can be used to represent this categorical data?

a) *Pie*



b) *Bar Chart (alphabetical order)*



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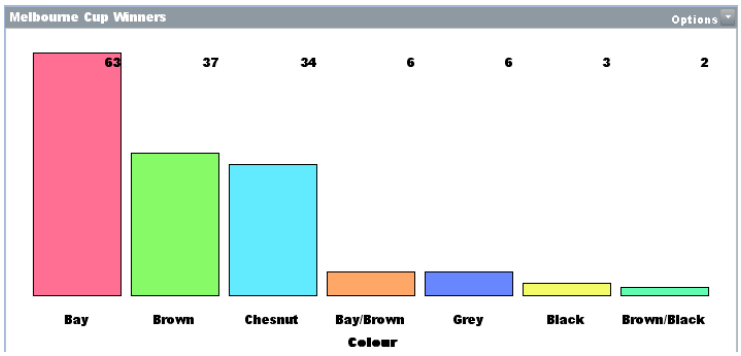
c) Bar Chart (ordered by decreasing frequency)



5. Which variable is represented by numbers but does not have a meaningful measurement scale associated with it?

Number – the number ranks the horse in the field for the race it won by the weight carried. The horse carrying the heaviest weight is number 1, the next heaviest weight is number 2 and so on to the last number for the horse carrying the lightest weight.