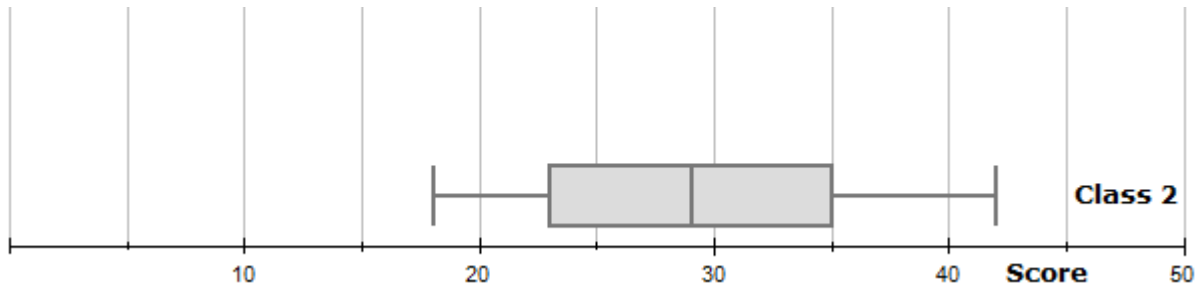


Routine Statistics Practice #1

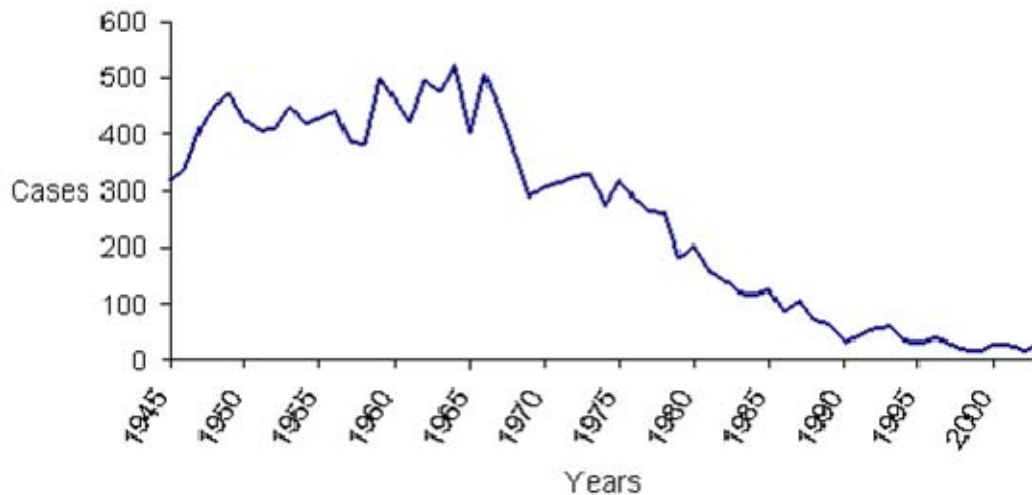
1. The following are the scores obtained in a recent test by Class 1: 24, 35, 27, 7, 41, 13, 11, 37, 13, 38, 30, 16, 33, 27, 22, 34, 30, 29, 9, 29, 24, 40, 30, 31, 15, 39
 - a) Plot them as a box-and-whisker plot on the scale below. (A stem-and-leaf or dot plot may help to organise the scores along the way.)



Compare your box-and-whisker you have drawn with the one drawn for Class 2.

- b) Which class did better in the test, and how do the graphs show that?
- c) What else can you say comparing the spread (distributions) of the results?

Reported tetanus cases in France by year, 1945-2003

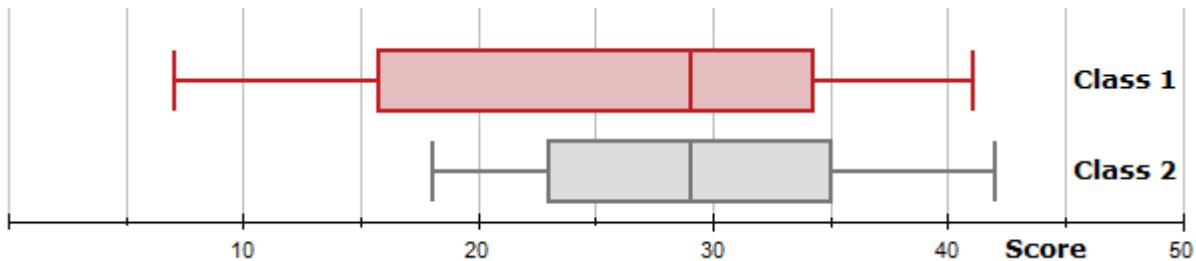


2.
 - a) How many cases of tetanus would you expect in France this year?
 - b) Describe the trends in tetanus cases in France over the last sixty years. Can you think of a reason for this pattern?
 - c) What might be a problem with the data gathered for this graph in talking about the amount of tetanus?

Answers: Routine Statistics Practice #1

1. The following are the scores obtained in a recent test by Class 1: 24, 35, 27, 7, 41, 13, 11, 37, 13, 38, 30, 16, 33, 27, 22, 34, 30, 29, 9, 29, 24, 40, 30, 31, 15, 39

- a) Plot them as a box-and-whisker plot on the scale below.



Compare your box-and-whisker you have drawn with the one drawn for Class 2.

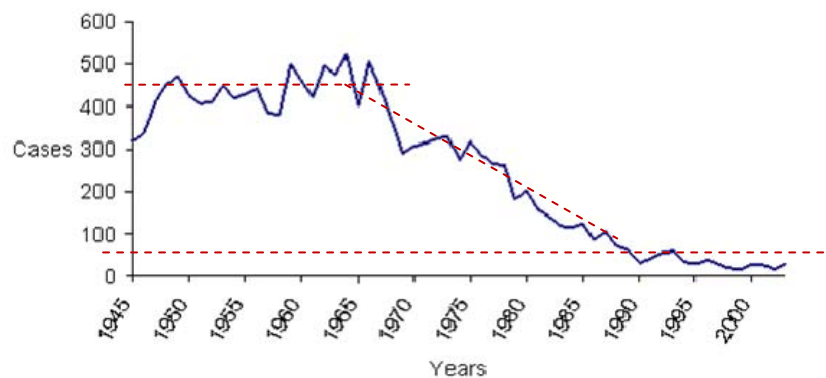
- b) Which class did better in the test? **The lower half of Class 2 did better.** The difference in the lowest scores and lower quartiles are more than differences due to sample variability.

The top half of each class were too similar to make any judgement, with the differences easily within sample variability. **There was no significant difference in the medians.**

- c) What else can you say comparing the spread (distributions) of the results? **The Class 2 scores are much more symmetrical around the median.** In Class 1 the median was very similar but the tail was much longer towards the low scores (skewed).

Reported tetanus cases in France by year, 1945-2003

Trends drawn in dotted lines



2. a) How many cases of tetanus would you expect in France this year? **less than 40, but more than ten.** (You cannot predict much more accurately with so little data.)
- b) Describe the trends in tetanus cases in France over the last sixty years. **It started more or less around 400. Then between 1965 and 1995 it trended consistently down. Then it has stayed consistently low.** Can you think of a reason for this pattern? **It would seem likely that a vaccine, or other prevention method, came in around 1965.**
- c) What might be a problem with the data gathered for this graph in talking about the amount of tetanus? **This is reported cases, and we cannot be certain that all cases are reported at the same rate over time.**
Also France's population has grown a lot. So the rate is lower even if the number of cases is the same.