

Part 6: Bootstrapping Activity

Bootstrapping is sampling from the sample with replacement. It normally involves sampling until you have the same number as in your original sample, but for the sake of this activity when we are doing it manually we are just going to take samples of 30 in total, which means we may end up with different numbers of forwards and backs.

Record the weights of the forwards and backs below (you won't end up filling up the whole table), and then use your calculator to work out the median for the forwards and the backs from the bootstrap, and find the difference between the two.

This activity can also be done online at: <http://www.jake4maths.com/mboot.php>

Bootstrap 1

[illegible]

Bootstrap 2

[illegible]

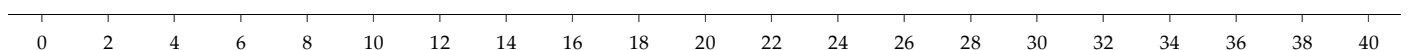
Bootstrap 3

Forwards	Backs
Med:	Med:
Difference:	

Bootstrap 4

Forwards	Backs
Med:	Med:
Difference:	

Plot the differences from both your bootstraps, as well as the bootstraps from your class as a dot plot on the axis below.



This gives us a fairly good idea of how accurate our samples are going to be, and if there is going to be a difference between the two groups (in this case the forwards' and the backs' weights). It is a very tedious process though, so we normally will use a computer to speed it up.

Bootstrapping Activity

Below is all of the rugby players from Data Set 1. You will need to cut them all out in order to do the activity on page 15. This activity can also be done online at:

<http://www.jake4maths.com/mboot.php>

Back 82	Back 84	Back 88	Forward 119	Forward 102
Back 84	Back 90	Back 96	Forward 100	Forward 120
Back 93	Back 99	Back 79	Forward 109	Forward 98
Back 93	Back 83	Back 97	Forward 114	Forward 115
Back 105	Back 87	Back 101	Forward 115	Forward 99
Back 82	Back 88	Forward 116	Forward 117	Forward 100
Back 93	Back 85	Forward 120	Forward 105	Forward 103
Back 89	Back 93	Forward 102	Forward 108	Forward 110
Back 90	Back 96	Forward 110	Forward 107	Forward 115
Back 85	Back 105	Forward 137	Forward 111	Forward 103
Back 101	Back 89	Forward 102	Forward 117	Forward 115
Back 89	Back 92	Forward 112	Forward 118	Forward 124
Back 94	Back 93	Forward 103	Forward 102	Forward 110
Back 85	Back 95	Forward 123	Forward 103	Forward 116
Back 87	Back 97	Forward 114	Forward 107	Forward 99
Back 93	Back 92	Forward 115	Forward 117	Forward 101
Back 88	Back 92	Forward 116	Forward 107	Forward 110
Back 89	Back 94	Forward 118	Forward 113	Forward 110
Back 100	Back 77	Forward 125	Forward 106	Forward 106
Back 104	Back 92	Forward 102	Forward 113	Forward 106
Back 92	Back 87	Forward 120	Forward 101	Forward 112
Back 92	Back 96	Forward 101	Forward 108	Forward 114
Back 94	Back 89	Forward 104	Forward 106	Forward 114
Back 95	Back 91	Forward 107	Forward 115	Forward 117
Back 97	Back 94	Forward 109	Forward 104	Forward 120
Back 104	Back 93	Forward 118	Forward 110	Forward 119
Back 80	Back 99	Forward 127	Forward 129	Forward 120