Data Collection 1A

1 a A census observes or measures every member of a population.

b An advantage is it that it will give a completely accurate result.

A disadvantage could be any one from:

It would be time consuming.
It would be expensive.
It would be difficult to process the data.

2 a The testing process will destroy the harness, so a census would destroy *all* the harnesses, meaning that there would be no harnesses left for climbers to use.

b The claim is misleading. 250 kg is the mean and median load at which the harnesses in the sample break. So we would expect half of the harnesses to break at a load of less than 250 kg.

c Test a larger number of harnesses.

3 a Any one from:

It would be time consuming.
It would be expensive.
It would be difficult to process the data.

b A list of residents.

c Each individual resident.

4 a The testing process would destroy the switches, so a census would destroy *all* the switches, meaning that there would be no switches left to sell.

b The mean is 19 615.4, less than the stated average. One of the switches survived significantly fewer operations, which suggests that the median of 22 921 might be a better average to take, as it is not affected by outliers. The data therefore supports the company's claim.

c Test a larger number of switches.

5 a All the mechanics in the garage.

b Everyone's views will be known.

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