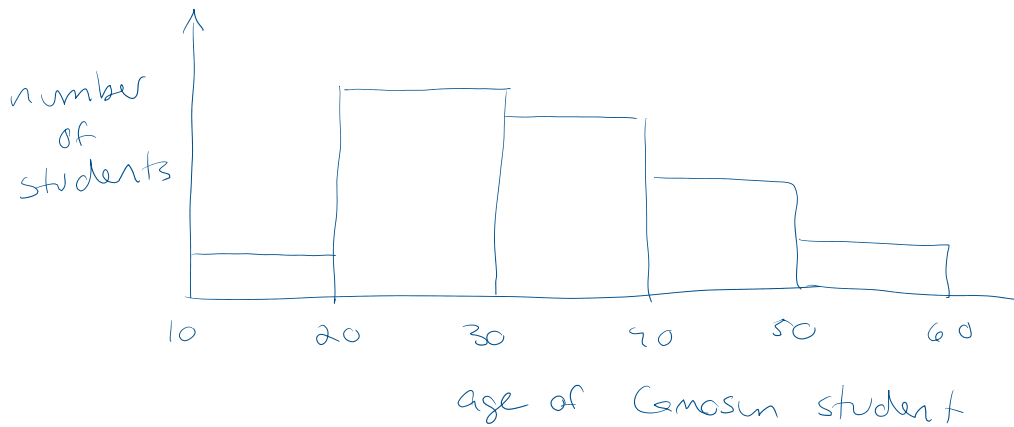


Section 5.4: Misleading Graphs

Tuesday, October 31, 2023 3:37 PM

ways that graphs can mislead (or at the very least, be badly designed) include but are not limited to:

① poorly defined categories



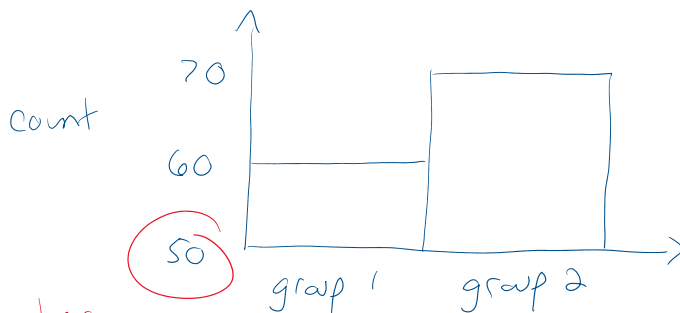
which students are aged 10-20 years?

the chances of a Camosun student being younger than 15 years old are so very small that having this bin is misleading.

② manipulating the vertical scale

a) suppressing zero

(also known as truncating zero)



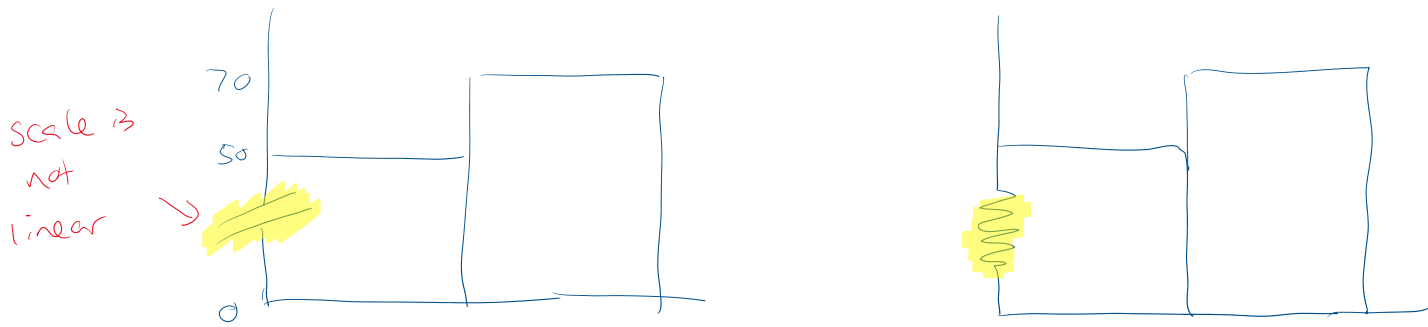
truncating
y-axis

← casual glance says that the second group has twice as many individuals as the

truncating or suppressing the zero because the origin is not shown

... as many individuals as the first group

if you must, better to do this:



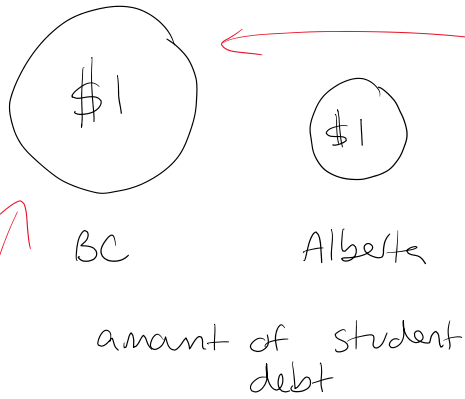
b) inconsistent scales / poor graphics

- when graphing software is not used



30% is almost twice the size of 17% but the height of the 30% bar does not reflect this

③ pictographs - use images to display the relative sizes of categories

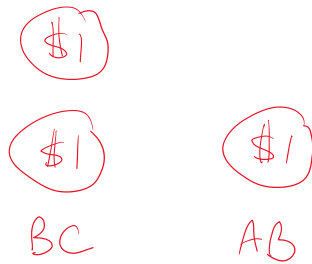


the diameter of the larger coin is almost twice the smaller one

but the area is almost 4 times the area of the smaller one

we tend to use areas to compare the relative size of objects but that is not necessarily how these are plotted

if you must, then do



use multiple images to show relative size, rather than scaling a single image

④ inappropriate 3D:

pie charts:



vs.



it can be very difficult to estimate the relative sizes

of each portion due to the perspective

bar charts:

