Assignment #3

Question 2.6 - Sleeping in college

A recent article in a college newspaper stated that college students get an average of 5.5 hrs of sleep at night. A student who was skeptical about this value decided to conduct a survey by randomly sampling 25 students. On average, the sampled students slept 6.25 hours per night. Identify which value represents the sample mean and which value represents the claimed population mean.

Answer:

- The sample mean: 6.25 hrs/night
- The claimed population mean: 5.5 hrs/night

Question 2.10 - Mix and match

Describe the distribution in the histograms below and match them to the box plot.
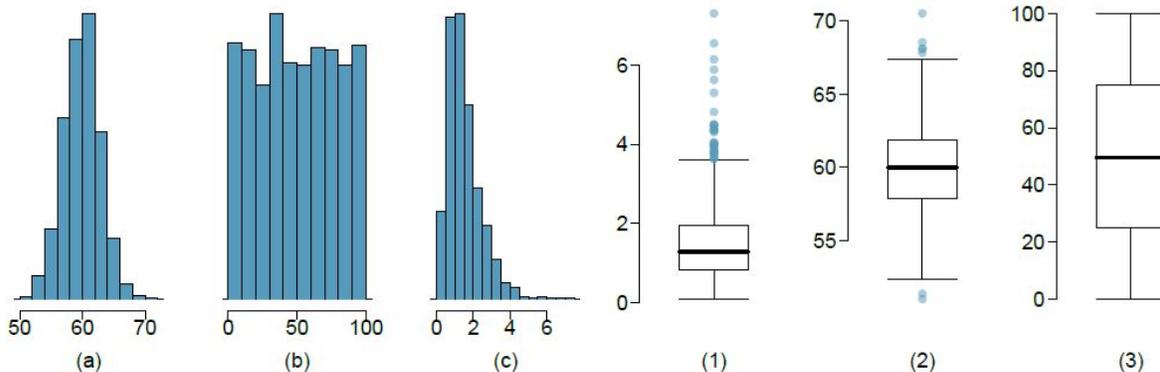
- A: The histogram (a) has a normal distribution (bell shape), values are centered around the mean and are symmetric. The corresponding box plot for this histogram is (2)

- B: The histogram (b) has an equal distribution where values are relatively similar. The corresponding box plot for this histogram is (3)
- C: The histogram (c) is right-skewed where the distribution has a long right tail. The corresponding box plot for this histogram is (1)

Question 2.22 - Views on Immigrations

910 randomly sampled registered voters from Tampa, FL, were asked if they thought workers who have illegally entered the US should be (i) allowed to keep their jobs and apply for US citizenship, (ii) allowed to keep their jobs as temporary guest workers but not allowed to apply for US citizenship, or (iii) lose their jobs and have to leave the country. The results of the survey by political ideology are shown below.

	Political ideology			
	Conservative	Moderate	Liberal	Total
(i) Apply for citizenship	57	120	101	278
(ii) Guest worker	121	113	28	262
(iii) Leave the country	179	126	45	350
(iv) Not sure	15	4	1	20
Total	372	363	175	910

a) What percent of these Tampa, FL, voters identify themselves as conservative?
   372/910 = 40.88%
b) What percent of these Tampa, FL, voters are in favor of the citizenship option?
   278/910 =30.55%
c) What percent of these Tampa, FL, voters identify themselves as conservatives and are in favor of the citizenship option? 57/910 = 6.26%
d) What percent of these Tampa, FL, voters who identify themselves as conservatives are also in favor of the citizenship option? 57/372 = 15.32%. What percent of

moderates share this view? 120/363 = 33.06%. What percent of liberals share this view? 101/175 = 57.71%

e) Do political ideology and views on immigration appear to be independent? Explain your reasoning.

Answer: No, if the views are independent, the variation among the views should be small. We see the huge difference between each viewpoint. (57 vs (120,101)) or 179 vs 126 vs 45