

This problem set covers material from Week 3, dates 9/23 – 9/26.

**Instructions:** Write or type complete solutions to the following problems and submit answers to the corresponding Canvas assignment. Your solutions should be neatly-written, show all work and computations, include figures or graphs where appropriate, and include some written explanation of your method or process (enough that I can understand your reasoning without having to guess or make assumptions). A general rubric for homework problems appears on the final page of this assignment.

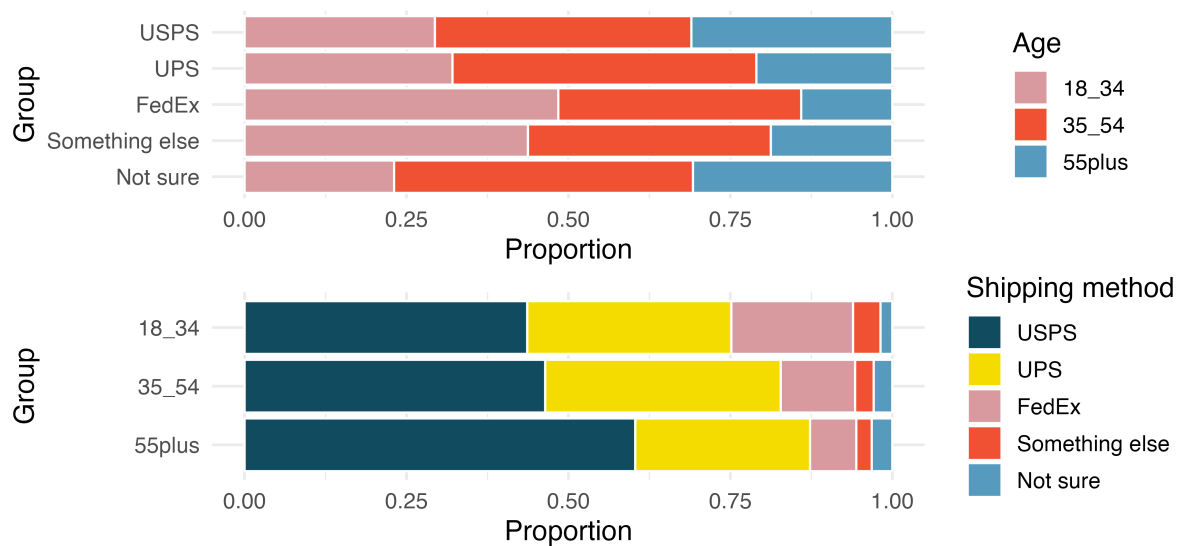
## Monday 9/23

1. Nine-hundred ten (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, (iii) lose their jobs and have to leave the country, or (iv) not sure. The results of the survey by political ideology are shown below.

<b>response</b>	<b>conservative liberal moderate</b>		
<b>Apply for citizenship</b>	57	101	120
<b>Guest worker</b>	121	28	113
<b>Leave the country</b>	179	45	126
<b>Not sure</b>	15	1	4

Be sure to show your work!

- (a) What percent of these Tampa, FL voters identify themselves as conservatives?
  - (b) What percent of these Tampa, FL voters are in favor of the citizenship option?
  - (c) What percent of these Tampa, FL voters identify themselves as conservatives and are in favor of the citizenship option?
  - (d) What percent of these Tampa, FL voters who identify themselves as conservatives are also in favor of the citizenship option? What percent of moderates share this view? What percent of liberals share this view?
  - (e) Do political ideology and views on immigration appear to be associated? Explain your reasoning.
2. A local news survey asked 500 randomly sampled Los Angeles residents which shipping carrier they prefer to use for shipping holiday gifts. The bar plots below show the distribution of responses by age group as well as distribution of responses by shipping method.



- Which graph (top or bottom) would you use to understand the shipping choices of people of different ages? Explain.
- Which graph (top or bottom) would you use to understand the age distribution across different types of shipping choices? Explain.
- A new shipping company would like to market to people over the age of 55. Who will be their biggest competitor? Explain.
- FedEx would like to reach out to grow their market share so as to balance the age demographics of FedEx users. To what age group should FedEx market?

**Wednesday 9/25**

TBD

**Thursday 9/26**

TBD

**General rubric**

Points	Criteria
5	The solution is correct <i>and</i> well-written. The author leaves no doubt as to why the solution is valid.
4.5	The solution is well-written, and is correct except for some minor arithmetic or calculation mistake.
4	The solution is technically correct, but author has omitted some key justification for why the solution is valid. Alternatively, the solution is well-written, but is missing a small, but essential component.
3	The solution is well-written, but either overlooks a significant component of the problem or makes a significant mistake. Alternatively, in a multi-part problem, a majority of the solutions are correct and well-written, but one part is missing or is significantly incorrect.
2	The solution is either correct but not adequately written, or it is adequately written but overlooks a significant component of the problem or makes a significant mistake.
1	The solution is rudimentary, but contains some relevant ideas. Alternatively, the solution briefly indicates the correct answer, but provides no further justification.
0	Either the solution is missing entirely, or the author makes no non-trivial progress toward a solution (i.e. just writes the statement of the problem and/or restates given information).
Notes:	For problems with multiple parts, the score represents a holistic review of the entire problem. Additionally, half-points may be used if the solution falls between two point values above.
Notes:	For problems with code, well-written means only having lines of code that are necessary to solving the problem, as well as presenting the solution for the reader to easily see. It might also be worth adding comments to your code.