

## Lesson 16: Describing Categorical Data (Proportions)

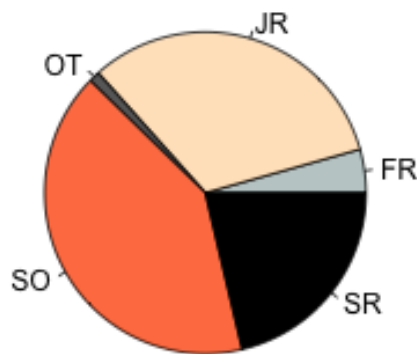
### Preparation

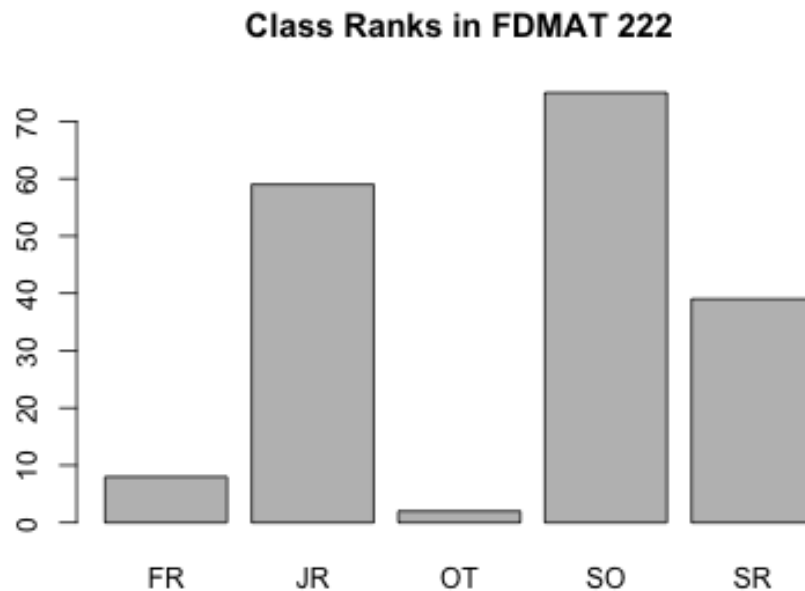
### Solutions

Please note that the steps show rounded numbers, but that the final answers to the problems are calculated without rounding.

Problem	Part	Solution
1	-	b. Pie Charts d. Bar Charts
2	-	$\hat{p} = \frac{x}{n}$ n = total sample size x = number of individuals in sample with the characteristic you are focusing on.
3	-	P or the population proportion
4	-	Standard Deviation of $\hat{p} = \sqrt{\frac{p(1-p)}{n}}$ n = total sample size p = the true population proportion, which is also the mean of the distribution of $\hat{p}$
5	-	Answers may vary: Categorical data groups the individuals in your study into categories, while numerical data assigns numbers to the individuals in your study. These numbers are a subset of the real numbers and can be discrete or continuous.

**Class Ranks in FDMAT 222**





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Your answers could vary. You could've used proportions to describe the data, described the data in v

**Freshman:** Count=8,  $\hat{p}=0.0437$

**Sophomore:** Count=75,  $\hat{p}=0.4098$

**Junior:** Count=59,  $\hat{p}=0.3224$

**Senior:** Count=39,  $\hat{p}=0.2131$

**Other:** Count=2,  $\hat{p}=0.0109$

9

A

The mean is 7% or 0.07 in this sample and the standard deviation is 0.0093

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B

$z= 1.073$

9

C

Area = 0.1416