

## Professor Notes About the “Bivariate EDA - Cat” Homework

- You must provide labeled tables and figures to support your results and refer to these tables in your sentences.
- Sentences cannot begin with a number (e.g., you cannot say “22.2% of ....”). You must reorganize the sentence so that it does not begin with a number.
- Percentages are typically rounded to one decimal place.

### Lights and Nearsightedness

1. A total of 17 children slept in “no light” conditions and developed nearsightedness (Table 1).

Table 1. Frequency table for children by lighting conditions during sleep and whether they developed nearsightedness or not.

Light	Nearsightedness		
	No	Yes	Sum
lamp	34	41	75
night light	153	79	232
no light	155	17	172
Sum	342	137	479

2. The percentage of children that slept in “no light” conditions that then developed nearsightedness is 9.9% (Table 2).

Table 2. Percentages of children by nearsightedness type within each sleeping condition.

Light	Nearsightedness		
	No	Yes	Sum
lamp	45.3	54.7	100.0
night light	65.9	34.1	100.0
no light	90.1	9.9	100.0

3. The percentage of all children that slept with a “lamp” and developed nearsightedness is 8.6% (Table 3).

Table 3. Percentages of all students in each sleeping condition and nearsightedness type.

Light	Nearsightedness		
	No	Yes	Sum
lamp	7.1	8.6	15.7
night light	31.9	16.5	48.4
no light	32.4	3.5	35.9
Sum	71.4	28.6	100.0

4. The percentage of children that slept with a “night light” that did not develop nearsightedness is 65.9% (Table 2).
5. The percentage of children that developed nearsightedness that slept with a “lamp” is 29.9% (Table 4).

Table 4. Percentage of children by sleeping conditions within each nearsightedness type.

Light	Nearsightedness	
	No	Yes
lamp	9.9	29.9
night light	44.7	57.7
no light	45.3	12.4
Sum	99.9	100.0

6. The percentage of children that developed nearsightedness is 28.6% (Table 3).

7. It appears that the percentage of children that developed nearsightedness is greater when the child slept with some sort of light (either a lamp or a night light), with a somewhat greater prevalence of nearsightedness with the lamp (Table 2).

## R Appendix

```
library(NCStats)
setwd('C:/aaaWork/Books/IntroStats/HW/')
d <- read.csv("nightlight.csv")
( tbl <- xtabs(~Light+Nearsightedness,data=d) )
addmargins(tbl)
( row.tbl <- percTable(tbl,margin=1) )
( col.tbl <- percTable(tbl,margin=2) )
( perc.tbl <- percTable(tbl) )
```