

## Honors Statistics

### 3.5 Conditional Probability WS #1

Set up a probability statement and then find the probability to 3 significant digits.

Joel surveyed his classmates and asked "Do you like school?" The results are as follows:

	Liked	Disliked	No Opinion	Total
Male	12	5	2	19
Female	10	3	1	14
Total	22	8	3	33

Find the probability of randomly selecting a classmate who

- 1) likes school
- 2) is not a female
- 3) likes school, given they are female
- 4) is a male, given they do not like school
- 5) is a female, given they like school
- 6) has no opinion, given they are female
- 7) does not like school, given they are female
- 8) likes school, given they are male

The question, "Do you smoke?" was asked of 100 people. Results are shown in the table. Use the table to answer #1 – 5.

	Yes	No	Total
Male	19	41	60
Female	12	28	40
Total	31	69	100

What is the probability of a randomly selected individual is

- 9) a male? 14)  $P(\text{Yes} \mid \text{male})$
- 10) a male and smokes? 15)  $P(\text{male} \mid \text{yes})$
- 11) a female, given that the individual smokes? 16)  $P(\text{no} \mid \text{female})$
- 12) a smoker, given that they are female? 17)  $P(\text{female} \mid \text{no})$
- 13) not a smoker, given that they are male? 18)  $P(\text{female and smokes})$

## Answers

1. .667

2. .576

3. .714

4. .625

5. .455

6. .0714

7. .214

8. .632

9. .6

10. .19

11. .387

12. .3

13. .683

14. .317

15. .613

16. .7

17. .406

18. .12