

Complete the **two-way frequency table**.

| | Dogs | Cats | Fish | Total |
|-----------------|------|------|------|-------|
| Male students | 6 | 4 | 4 | 14 |
| Female students | 5 | 10 | 1 | 16 |
| Total | 11 | 14 | 5 | 30 |

1. How many total students took the survey? Is this a joint or marginal frequency?

30 Students took the survey. The overall total is neither joint nor marginal.

2. How many female students are in the class? How many male students are in the class? What kind of frequencies are these?

Female: 16 Male: 14 Type of Frequencies: marginal

3. Who likes dogs more than cats, male students or female students? Are you comparing the joint or marginal frequencies? Males like dogs more than cats. Look at joint frequencies to make comparison between males + females.

4. What is the **probability** that a student surveyed was a male student who like dogs? $\frac{6}{30} = \boxed{\frac{1}{5}}$

5. Find the **probability** that a student surveyed was a female. $\frac{16}{30} = \boxed{\frac{8}{15}}$

6. Percentage (cats)? $\frac{14}{30} = \boxed{46.7\%}$

7. P(female \cap fish)? $\frac{1}{30}$
and \leftarrow intersect (overlap)

8. Out of all the students surveyed, what **percent** of them are females who like dogs? $\frac{5}{30} = \boxed{16.7\%}$

9. Given that a female is chosen, what is the **probability** she preferred cats as pets? $\frac{10}{16} = \boxed{\frac{5}{8}}$

10. What **percent** of male students preferred dogs for pets? $\frac{6}{14} = \boxed{42.9\%}$

11. P(male | dogs)? $\frac{6}{11}$

12. What is the **probability** that a person chosen is a female that prefers fish? $\frac{1}{30}$

13. What is the **probability** that a person chosen is female, given that they prefer fish as a pet? $\frac{1}{5}$

14. What is the **probability** that a person chosen prefers fish, given that the person is female? $\frac{1}{16}$

15. P(dogs | female)? $\frac{5}{16}$

16. What is the **probability** that a student surveyed is male? $\frac{14}{30} = \frac{7}{15}$