| A fish tank contains 4 tetras, 3 angelfish and 5 mollies. |  |  |
| :--- | :--- | :---: |
| 1. If one fish is chosen at random, find <br> P (angelfish). | 2. If one fish is chosen at random, find <br> P (tetra or molly). |  |
| 3. If two fish are chosen at random, with <br> replacement, what is P (molly and then <br> tetra)? | 4. If two fish are chosen at random, without <br> replacement, what is P (angelfish and <br> tetra)? |  |
| 5. If one fish is chosen and placed back into <br> the tank, then a second fish is chosen, <br> what is the probability that they are both <br> angelfish? | 6. If one fish is chosen and removed from <br> the tank, and then a second fish is <br> chosen, what is the probability that they <br> are both angelfish? |  |


| A card is chosen from a standard deck of playing cards. |
| :--- |
| $\qquad$ Red Cards Black Cards total <br>  Face Cards 6 6 <br> 12    <br> Not Face Cards 20 20 40 <br> total 26 26 52 <br> 7. Find P(Red) 8. Find P(Black $\cap$ Face Card)   <br> 9. Find P(Red lNot a Face Card) 10. Find P(Black $\cup$ Face Card)   |
| 11. Are drawing a black card and drawing a face card independent events? Show or explain |
| why. |

12. In a geometry class, 30 students passed the probability test and 3 did not pass. Thirteen of the students in the class were female and 11 of those female students passed the test.
A. Create a frequency table and a Venn diagram to represent this situation.
B. If a student is chosen at random, what is the probability that it is a boy or a person who passed the test?
C. If a student is chosen at random, what is the probability that it is a girl or a person who did not pass?
13. In a survey, 300 people were asked whether they prefer shopping in a store or online. 125 respondents were male, and 148 respondents said they prefer shopping in a store. Of the respondents, 55 were males who prefer shopping online. Use this information to complete the table:

|  | Male | Female | Total |
| :--- | :--- | :--- | :--- |
| Store |  |  |  |
| Online |  |  |  |
| total |  |  |  |

If a person surveyed is chosen at random, what is the probability that...
A. the person prefers shopping online.
B. the person is male, given that they prefer shopping in a store.
C. the person prefers online shopping, given that they are female.
D. Are "preferring online shopping" and "being female" independent events? Show ore explain how you know?
14. Use the Venn diagram to find the following probabilities.
A. P(Boy)
B. $P($ Girl $\cup \mathrm{Cat})$
C. $P($ Boy $\cap$ Dog $)$
D. $\mathrm{P}(\text { Girl } \cup \text { Dog })^{\prime}$
E. $\quad \mathrm{P}(\text { Boy } \cap \mathrm{Cat})^{\prime}$

15. The probability that it will rain is 0.8 . The probability of lightning is 0.5 . The probability of rain and lightning is 0.4 . What is the probability that of rain or lightning?
16. Assume that the following events are dependent:

- The probability that a student rides the bus is 0.65 .
- The probability that a student is a sophomore is 0.27 and rides the bus.

What is the probability that a student is a sophomore, given that they ride the bus?

