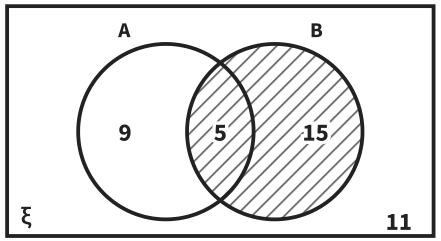
Conditional Probability: Venn Diagrams

1

The Venn diagram shows the number in each region. One is picked at random. The given circle, B, is shaded.
Find P(A | B).

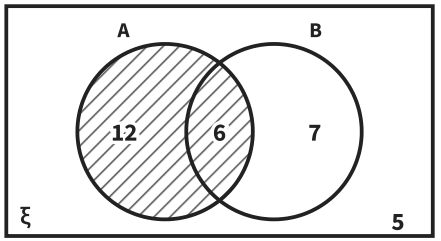


$P(A \mid B) = \frac{\text{the overlap}}{\text{all of B}} = \frac{\square}{20}$

Answer _____

2

The Venn diagram shows the number in each region. One is picked at random. The given circle, A, is shaded.
Find P(B | A).

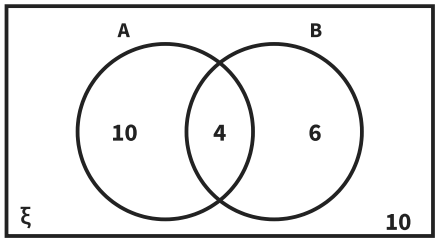


$P(B \mid A) = \frac{\text{the overlap}}{\text{all of A}} = \frac{\square}{\square}$

Answer _____

3

The Venn diagram shows the number in each region. One is picked at random. Shade the given circle. Find P(A | B).

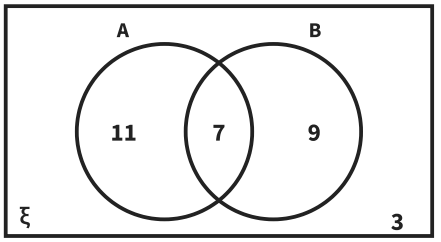


$P(A \mid B) = \frac{\text{the overlap}}{\text{all of B}} = \frac{\square}{\square}$

Answer _____

4

The Venn diagram shows the number in each region. One is picked at random. Shade the given circle. Find P(B | A).

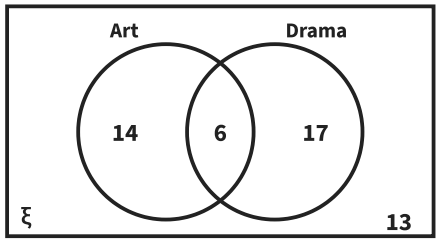


$P(B \mid A) = \frac{\text{the overlap}}{\text{all of A}} = \frac{\square}{\square}$

Answer _____

5

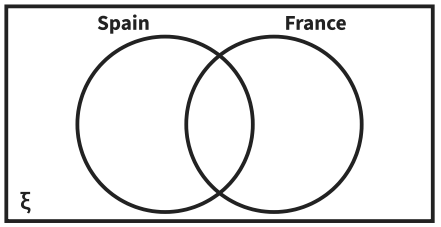
The Venn diagram shows 50 students and the clubs they go to. A student is chosen at random. Given that the student goes to art, find the probability that they also go to drama.



Answer _____

6

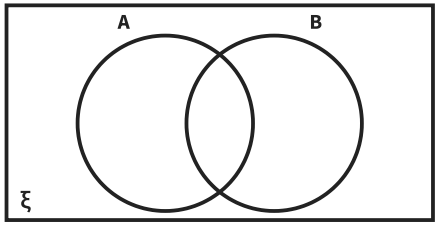
48 people were asked where they have been on holiday. 30 have been to Spain, 22 to France and 12 to both.
Complete the Venn diagram. Given that a person has been to France, find the probability that they have also been to Spain.



Answer _____

7

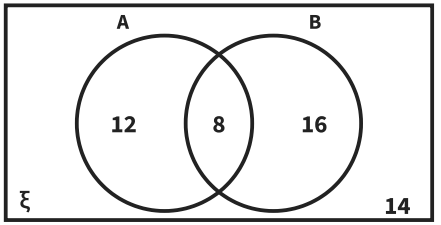
P(A) = 0.7, P(B) = 0.5 and P(A ∩ B) = 0.3.
Write the probabilities in the Venn diagram. Find P(A | B).



Answer _____

8

Jamal says $P(A \mid B) = \frac{8}{50}$.
Explain Jamal's mistake.
Then find P(A | B).

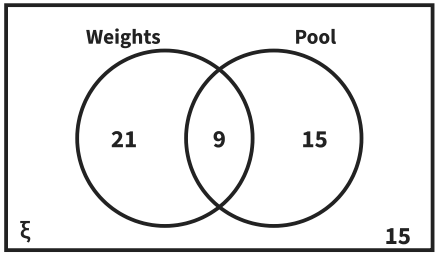


Answer _____

Conditional Probability: Venn Diagrams *further practice*

9

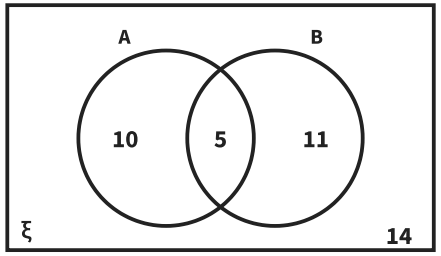
The Venn diagram shows what 60 members of a gym use. A member is chosen at random. Given that the member uses the pool, find the probability that they also use the weights.



Answer _____

10

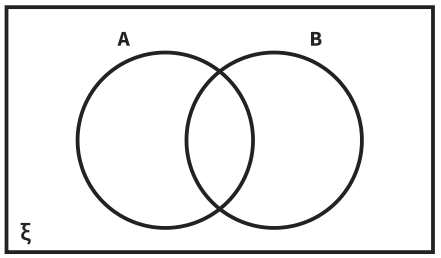
The Venn diagram shows the number in each region. One is picked at random. Find P(A | B′).



Answer _____

11

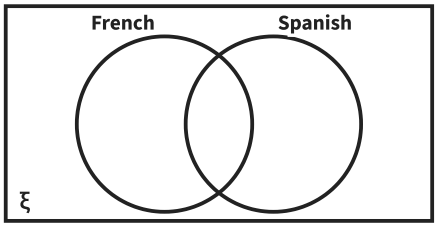
P(A) = 0.45, P(B) = 0.3 and P(A ∩ B) = 0.1. Find P(B | A).



Answer _____

12

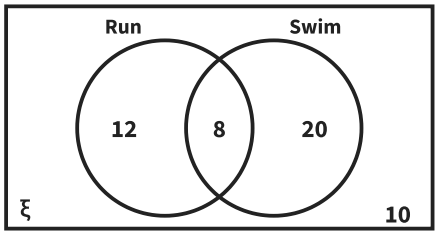
36 students: 20 study French, 18 study Spanish and 5 study neither. A student is chosen at random. Given that the student studies French, find the probability that they also study Spanish.



Answer _____

13

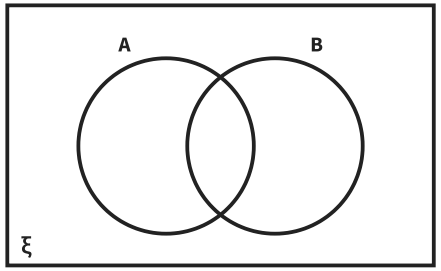
The Venn diagram shows 50 people. Which is more likely: a runner who also swims, or a swimmer who also runs? Show how you know.



Answer _____

14

ξ = whole numbers from 1 to 12.
A = even numbers. B = multiples of 3.
Write each number in the Venn diagram.
A number is picked at random.
Find P(A | B).

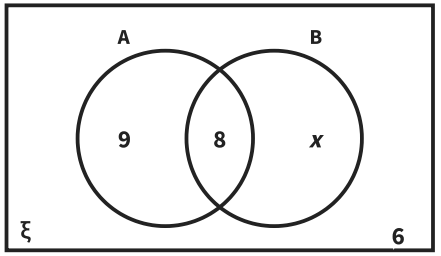


Answer _____

15

One is picked at random. P(A | B) = $\frac{2}{5}$.

Find *x*.



Answer _____

16

Mia says P(A | B) can never be equal to P(B | A). Is Mia right? Explain.

Answer _____