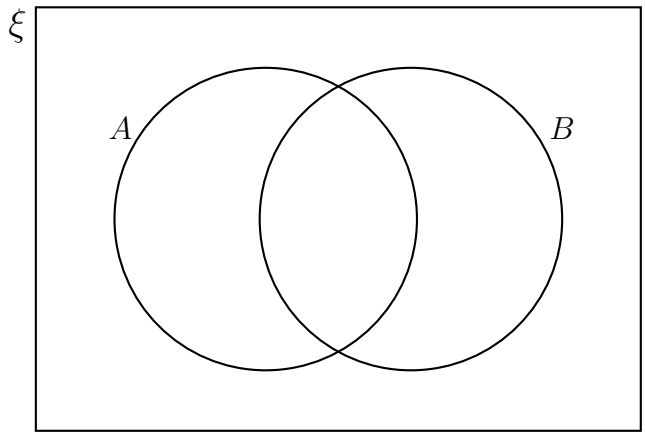
1. { FYI No need for students to be able to understand e.g. factor etc}

   (a) ξ = {bird, blue, cat, rabbit, room, red, thick, thin}
   A = {bird, cat, rabbit, room} {FYI categories like: noun, 4 letters, palindrome etc}
   B = {bird, blue, room, thin}

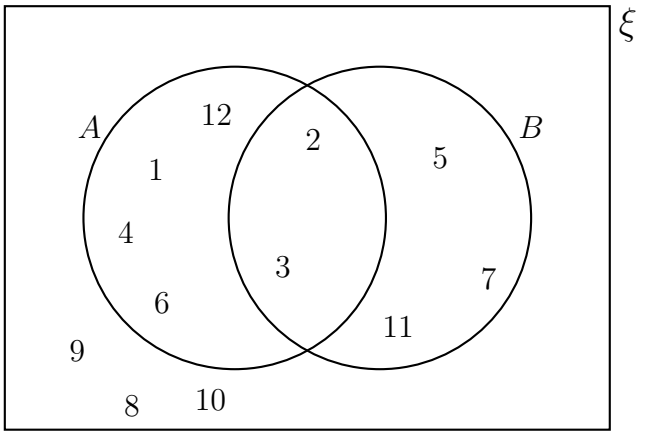
   (b) $\xi = \{▲, △, ♦, ■, ◯, ♡, ♣, ♠, ◇\}$
   $A = \{♣, ♠, ▲,\}$ {FYI categories like: black, polygon, line or rotational symmetry}
   $B = \{▲, △, ◇, ♦, ■\}$

   (c) ξ = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
   A = {1, 3, 5, 7, 9} {FYI categories like: even, multiple of 3, factor of 6, prime}
   B = {1, 4, 9}

   Complete this Venn diagram for this information.



2. Here is a Venn diagram.



   (i) Complete the set $A \cap B = \{$ . . . . . $\}$

   (ii) Complete the set $A' = \{$ . . . . . $\}$

   (iii) Write down the numbers that are in the set B'

   (iv) Write down the numbers that are in the set $A \cup B$

   (v) Abbey says that the set $A' = \{5, 7, 11\}$

   She is wrong.

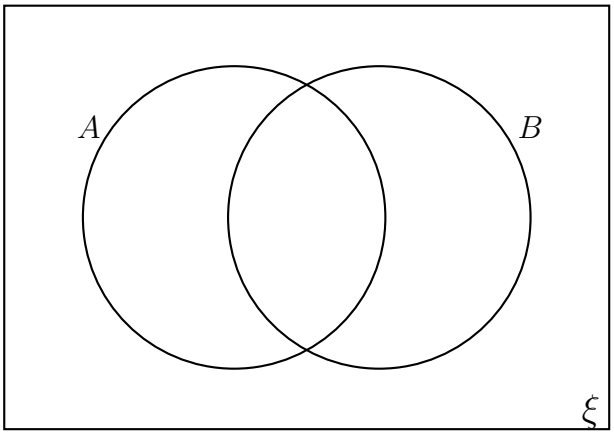
   Explain why.

3. $\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$

   (a) $A \cap B = \{12\}$
   $A \cup B = \{4, 6, 8, 12\}$
   $B = \{6, 12\}$

   (b) $A = \{2, 4, 6, 8, 10\}$
   $A \cap B = \{4\}$
   $A \cup B = \{1, 2, 4, 6, 8, 9, 10\}$

   Complete this Venn diagram for this information.



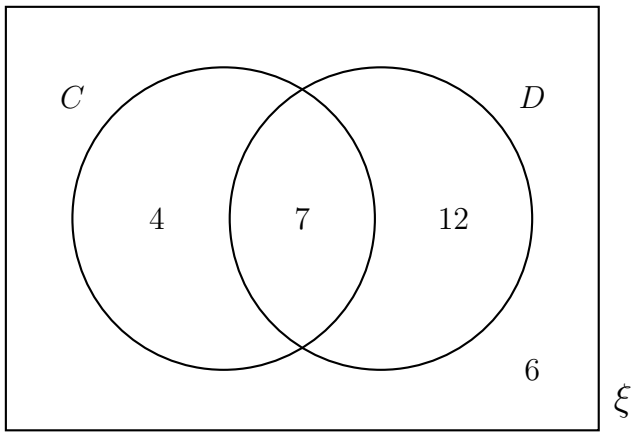
4. This Venn diagram shows the number of visitors to the vet who own a cat, C and who own a dog, D.

   A visitor to the vet is picked at random.

   (a) Write down

   (i) P(C) {OR P(C') OR P(D) OR P(D')}

   (ii) P($C \cap D$) {OR P($C \cup D$) }



   (b) Describe in words what P($C \cap D$) means. {OR P($C \cup D$) OR P(C') OR P(D')}

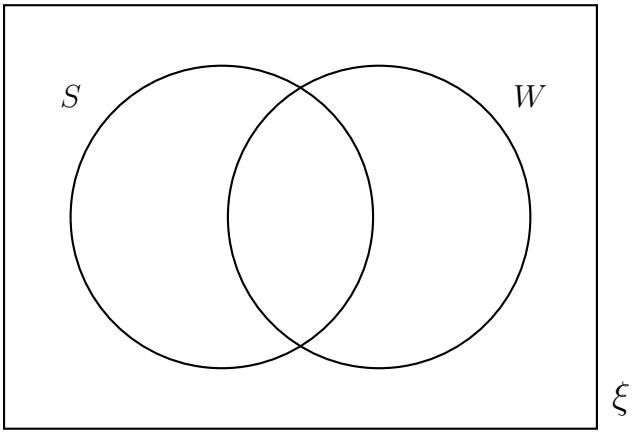
5. Fearne carried out a survey of visitors in a water park to find out how many visitors go on the water slide, S and how many visitors go on the wave machine, W.

   (a) 98 visitors answer the survey in the water park
   71 visitors go on the wave machine
   56 visitors go on the both the water slide and the wave machine
   90 visitors go on the water slide or the wave machine or both

   (b) {OR}
   71 visitors go on the wave machine
   75 visitors go on the water slide
   56 visitors go on the both the water slide and the wave machine
   8 visitors go on neither the water slide nor the wave machine

   (c) {OR}
   71 visitors go on the wave machine
   75 visitors go on the water slide
   90 visitors go on the the water slide or the wave machine or both
   23 visitors don't go on the water slide

   Complete this Venn diagram to show Fearne's data.



6. ξ = {integers 1 to 10} OR = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
   A = {prime numbers} OR {odd numbers} OR {square numbers}
   B = {factors of 9} OR OR {multiples of 3}
   Complete this Venn diagram for this information.