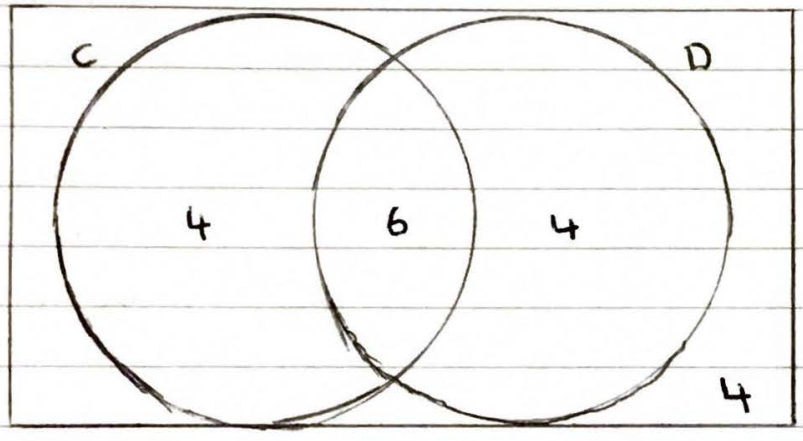
Probability from a venn diagram.

worked example

- In a class of 20 students (E)
  10 people have cats (C)
  12 people have dogs (D)
  4 people have neither



a) complete the venn diagram

- we know that 4 people have neither so that can go outside
- we can now subtract 4 from the total (20 - 4 = 16) as we have now finished with this number.
- were told that 10 people have cats and 12 have dogs. 10 + 12 = 22, which goes over the amount of people we had left. (16). This means that some people must have a cat and a dog. To get this number we can do 22 - 16 = 6. 6 people have both pets.
- we already know that 10 people have cats. TO find the amount of people that have only cats, we can do 10 - 6 (the number from the middle.) to get 4. Repeat with the other sides.
- TO check, add all numbers in the venn diagram. You should get the original total of 20.

b) Find the probability that a student chosen at random owns a cat and a dog.