



A card is selected at random from a pack of 52 playing cards.

Let  $A$  be the event that the card is an ace.

Let  $D$  be the event that the card is a diamond.

Find:

- a.  $P(A \cap D)$
- b.  $P(A \cup D)$
- c.  $P(A')$
- d.  $P(A' \cap D)$

In a class of 30 students, 7 are in the choir, 5 are in the school band and 2 are in both.

A student is chosen at random.

Find the probability that

- a. The student is not in the band
- b. The student is not in the choir nor the band

A vet surveys 100 of her clients.

25 own dogs

53 own cats

40 own fish

15 own dogs and cats

10 own cats and fish

11 own dogs and fish

7 own all three

Find the probability that a client, chosen at random

- a. Owns only a dog
- b. Does not own fish
- c. Does not own dogs, cats or fish