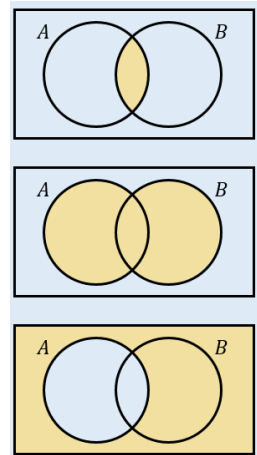# 2A Set Notation

1. A card is selected at random from a standard pack of playing cards. Let A be the event that the card is an Ace, and D be the event that the card is a diamond.
a) Draw a Venn diagram to represent this information.

Find:

b) $P(A \cap D)$

c) $P(A \cup D)$

d) $P(A')$

e) $P(A' \cap D)$

2. Given that $P(A) = 0.3$, $P(B) = 0.4$ and $P(A \cap B) = 0.25$.

a) Explain why events A and B are not independent

b) Given also that $P(C) = 0.2$, events A and C are mutually exclusive, and events B and C are independent, draw a Venn diagram to represent the situation

c) Find $P\big((A \cap B') \cup C\big)$