1. If E and F are events and \( P(E) = 0.35 \) and \( P(F) = 0.23 \) and \( P(E \cap F) = 0.14 \), determine \( P(E \cup F) \).

2. From textbook, page 362 number 36, if one person is selected at random, what is the

   (a) \( P(\text{one subscribes to all three newspapers}) \)?

   (b) \( P(\text{one subscribe to only NYT})? \ P(\text{one subscribe to only WSJ})? \ P(\text{subscribe to only UST})? \)

   (c) \( P(\text{one subscribes to exactly two newspapers}) \)?

3. Three cans containing marble are set in a row and listed as can-1, can-2 and can-3. Can-1 contains a red and a blue and a white marble. Can-2 contains a red and a white and a green marble. Can 3 contains a blue and a white and a green marble. Make a tree diagram and answer the questions on the basis that you pull one marble from each can.

   (a) \( P(\text{at least one red marble}) \)?

   (b) \( P(\text{a red, a white and a blue marble in any order})? \)

   (c) \( P(\text{not pulling a blue one at all})? \)

   (d) \( P(\text{exactly two white marbles})? \)

   (e) \( P(\text{either two red or two blue marbles})? \)

4. A three digit number is formed using the numbers \{1, 2, 3, 4, 5, 6, 7, 8 \}
(a) How many are in the sample space if repetition is not permitted?

(b) What is \( P(\text{number contains a 2, 4 and 6})? \)

(c) What is \( P(\text{number contains a 2})? \)

5. A four digit number is formed using the same numbers \( \{1, 2, 3, 4, 5, 6, 7, 8\} \)

(a) How many are in the sample space if repetition is not permitted?

(b) What is \( P(\text{all digits are even})? \)

(c) What is \( P(\text{the first two numbers are 12})? \)

(d) What is \( P(\text{the first three numbers consist of 123 in any order})? \)

(e) What is \( P(\text{number contains a 2})? \)

6. One card is dealt from a standard deck of cards. (Ace=1)

(a) What is the \( P(\text{heart})? \)

(b) \( P(\text{queen})? \)

(c) \( P(\text{ace or face card})? \)

(d) \( P(\text{less than 6 or a spade})? \)

(e) \( P(\text{club or even number})? \)

(f) \( P(\text{red card or even number})? \)

(g) \( P(\text{face card or red card})? \)