1. The choices for problem number 4 from the book are given below.
   a. \{1, 2, 3, 4\}
   b. \{3, 4, 6, 7\}
   c. \{1, 2, 3, 4, 6, 7\}
   d. \{5, 8\}
   e. None of the above.

2. The choices for problem number 6 from the book are given below.
   a. \{2\}
   b. \{1, 2, 4\}
   c. \{3, 5, 6, 7, 8\}
   d. \{1, 2, 4, 5, 6, 8\}
   e. None of the above.

3. The choices for problem number 30 from the book are given below.
   a. \(E \cap F\)
   b. \((E \cap F^c) \cup (F \cap E^c)\)
   c. \((E \cup F^c) \cap (F \cup E^c)\)
   d. \(E \cup F\)
   e. None of the above.

4. The choices for problem number 32 from the book are given below.
   a. \((E \cup F)^c \cap G\)
   b. \((E \cap F)^c \cup G\)
   c. \((E^c \cup F^c) \cap G\)
   d. \((E^c \cup F^c)^c \cap G\)
   e. None of the above.

Use the following information for question 5 and 6.

An experiment consists of tossing a coin 4 times.

5. List the event of getting two heads.
   a. \(E = \{\{HHTT\}, \{TTHH\}\}\)
   b. \(E = \{\{TTHH\}, \{THTH\}, \{HTHT\}, \{HTHT\}, \{HHTT\}\}\)
   c. \(E = \{\{HTHT\}, \{THTH\}\}\)
   d. \(E = \{\{HHTT\}, \{HTTH\}, \{TTHH\}\}\)
   e. None of the above.

6. How many outcomes have only one tail?
   a. 4
   b. 3
   c. 8
   d. 1
   e. None of the above.
An experiment consists of selecting a letter at random from the letters in the word *ANTARTICA* and observing the outcomes.

7. What is an appropriate sample space for this experiment?
   a. $S = \{AAA, N, TT, R, I, C\}$
   b. $S = \{A, N, T, R, I, C\}$
   c. $S = \{ANTR\}$
   d. $S = \{T, R, I, A\}$
   e. None of the above.

8. Describe the event “the letter selected is not a vowel”
   a. $E = \{A, I\}$
   b. $E = \{N, T, R, C\}$
   c. $E = \{NT, RC\}$
   d. $E = \{A, C\}$
   e. None of the above.

An experiment consists of tossing a pair of dice and observing the numbers that are on the uppermost surface of each die.

9. Describe the event of rolling at least one 3.
   a. $E = \{(1,3), (2,3), (3,3), (4,3), (5,3), (6,3), (3,1), (3,2), (3,4), (3,5), (3,6)\}$
   b. $E = \{(1,3), (2,3), (4,3), (5,3), (6,3), (3,1), (3,2), (3,4), (3,5), (3,6)\}$
   c. $E = \{(3,3)\}$
   d. $E = \{(1,3), (2,3), (3,3), (4,3), (5,3), (6,3)\}$
   e. None of the above.

10. Describe the event of rolling a sum of the numbers uppermost is 6.
    a. $E = \{(1,5), (2,4), (3,3), (4, 2), (5,1)\}$
    b. $E = \{(1,6), (2,6), (3,6), (4,6), (5,6), (6,6)\}$
    c. $E = \{(0,6), (1,5), (2,3), (3,3), (4, 2), (5,1), (6,0)\}$
    d. $E = \{(1,6), (2,6), (3,6), (4,6), (5,6), (6,6), (6,1), (6,2), (6,3), (6,4), (6,5)\}$
    e. None of the above.