

২৫ জ্যৈষ্ঠ মঙ্গলবার ১৪২২
সপ্তমী ঘণ্টা ১০/৪৫
Saka - 19 Jaistha 1937
অহম - ২৫ জ্যৈষ্ঠ ১৪২২
Sunrise - 4.54 A.M.

JUNE ①
09
TUESDAY

৩ আষাঢ় কৃষ্ণ মঙ্গলবার ২০৩২
সপ্তমী ঘণ্টা ১০/৪৫
Hizri - 21 Sawan 1436
৯ জুন ২০১৫
Sunset - 6.16 P.M.

Exercise 2.1 :

1. Four universities — 1, 2, 3, 4 — are participating in a holiday basketball tournament. In the first round, 1 will play 2 and 3 will play 4. Then the two winners will play for the championship, and the two losers will also play. One possible outcome can be denoted by 1324 (1 beats 2 and 3 beats 4 in first-round games, and then 1 beats 3 and 2 beats 4).

- List all outcomes in S .
- Let A denote the event that 1 wins the tournament. List outcomes in A .
- Let B denote the event that 2 gets into the championship game. List outcomes in B .
- What are the outcomes in $A \cup B$ and in $A \cap B$? What are the outcomes in A' ?

Ans: a) Case-1: 1 & 3 win first round. Then possible outcomes:

1324, 1342, 3124, 3142

Case-2: 1 & 4 win in 1st round; Then outcomes are:

1423, 1432, 4123, 4132

Case-3: 2 & 3 win in 1st round. Then outcomes are: 2341, 2314, 3214, 3241.

W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	JULY							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	2015

८ आषाढ़ कृष्ण बुधवार २०७२
अष्टमी घ० ८/१८
Hizri - 22 Sawan 1436
१० जून २०१५
Sunrise - 4.54 A.M.

(2)
JUNE
10
WEDNESDAY

२६ ज्येष्ठ शुक्लवार १८२२
अष्टमी घ० ८/१८
Saka - 20 Jyestha 1937
अहम - २६ ज्येष्ठ १८२२
Sunset - 6.16 P.M.

case 4: 2 8 4 win 1st round. Then outcomes are:

2413, 2431, 4213, 4231.

$S = \{1324, 1342, 3124, 3142, 1423, 1432, 4123, 4132, 2314, 2341, 3214, 3241, 2413, 2431, 4213, 4231\}$

b) $A = \{1324, 1342, 1423, 1432\}$

c) $B = \{2314, 2341, 3214, 3241, 2413, 2431, 4213, 4231\}$

d) $A \cup B = \{1324, 1342, 1423, 1432, 2314, 2341, 3214, 3241, 2413, 2431, 4213, 4231\}$

$A \cap B$ contains no outcomes (A and B are disjoint),

$A^c = \{3124, 3142, 4123, 4132, 2314, 2341, 3214, 3241, 2413, 2431, 4213, 4231\}$

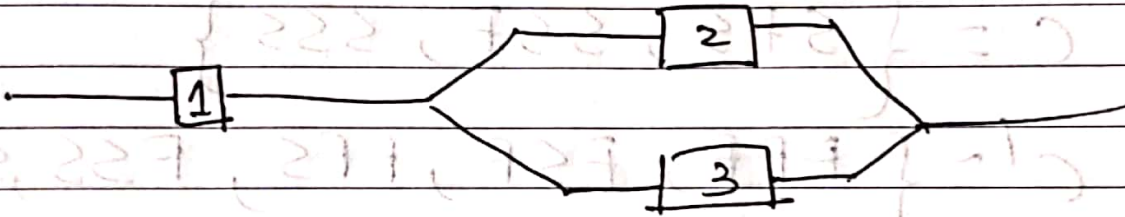
JUNE	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W							
2015	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	o

২৭ জ্যৈষ্ঠ বৃহস্পতিবার ১৪২২
নবমী ঘণ্টা: ৫/৪৯/দশমী রাণ্ড: ৩/২৬
Saka - 21 Jaistha 1937
জহম - ২৭ জ্যৈষ্ঠ ১৪২২
Sunrise - 4.54 A.M.

3
JUNE
11
THURSDAY

৭/৭০ আষাঢ় কৃষ্ণা গুরুবার ২০৭২
নবমী ঘণ্টা: ৫/৪৯/দশমী রাণ্ড: ৩/২৬
Hizri - 23 Sawan 1436
৭৭ জুন ২০৭৭
Sunset - 6.17 P.M.

③ Three components are connected to form a system as shown in the accompanying diagram. Because the components in the 2-3 subsystem are connected in parallel, that subsystem will function if at least one of the two individual components functions. For the entire system to function, component 1 must function and so must the 2-3 subsystem.



The experiment consists of determining the condition of each component [S (success) for a functioning component and F (failure) for a nonfunctioning component].

- What outcomes are contained in the event A that exactly two of out of the three components function?
- Which outcomes are contained in the event B that at least two of the components function?

W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	JULY
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	2015

११ आषाढ कृष्ण शुक्रवार २०७२
एकादशी रा० १/१२
Hizri - 24 Sawan 1436
१२ जुन २०१५
Sunrise - 4.54 A.M.

५
JUNE
12
FRIDAY

२८ ज्येष्ठ शुक्रवार १८३२
एकादशी रा० १/१२
Saka - 22 Jaistha 1937
अहम - २८ ज्येष्ठ १८३२
Sunset - 6.17 P.M.

c) Which outcomes are contained in C that the system functions?

d) List outcomes in C' , $A \cup C$, $A \cap C$, $B \cup C$, and $B \cap C$.

Ans; a) $A = \{SSF, SFS, FSS\}$

b) $B = \{SSF, SFS, FSS, SSS\}$

c) $C = \{SFS, SSF, SSS\}$

d) $C' = \{FFF, FSF, FFS, FSS, SFF\}$

$A \cup C = \{SSF, SFS, FSS, SSS\}$

$A \cap C = \{SSF, SFS\}$

$B \cup C = \{SSF, SFS, FSS, SSS\} = B$

$B \cap C = \{SSF, SFS, SSS\} = C$

JUNE	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W
2015	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	