1. Your senior software engineer helped you to define the software process duration with a table. The sprint is 1 week, assume that team will work for 5 days in a week. The team consists of three members working 8 hours per day. Draw a burndown chart to show the ideal efforts hours. The effort of all team members are shown in Table 1.

Table 1.

Backlog Items	Day 1	Day 2	Day 3	Day 4	Day 5
User Story #1					
Task 1A	5	2	3	2	1
Task 1B	2	4	3	3	1
Task 1C	3	3	1	2	1
Task 1D	1	0.5	0.5	0.5	2
User Story #2					
Task 2A	3	2	1	2	1
Task 2B	1	2	3	3	0
Task 2C	2	3	1	1	1
Task 2D	0.5	1	1	0	2
User Story #3					
Task 3A	4	3	2	0	0
Task 3B	2	2	4	1	1
Task 3C	0.5	0.5	0	0	2
User Story #4					
Task 4A	3	1	2	2	0
Task 4B	1	1	2	3	1
Task 4C	1	1	0	0	0
Task 4D	1	1	0.5	0.5	2
Total	30	27	24	20	15

2. Answer the following questions based on the codes below:

```
line 1: VIP_today = 0, count = 0;
line 2:  while (count<10){
line 3:             if (spending[count]>=500)
line 4:                 VIP_today++;
line 5:                 count++;}
line 6: if (VIP_today > 8)
line 7:         System.out.println(“Hit VIP Sales Target”);
line 8: else
line 9:         System.out.println(“Target failed”);
```

i) Draw out the control flow graph based on the codes with line number as the node.

ii) With the given test case below, show the expected outcome.

spending[0]	500
spending[1]	399
spending[2]	700
spending[3]	200
spending[4]	1000
spending[5]	4000
spending[6]	299
spending[7]	90
spending[8]	500
spending[9]	700

3. Reliability is one of the most important software quality attributes. Reliability metrics are derived from failure occurrences expressions and data. Listed below are some common types of reliability metrics. Explain how these metrics work and when is it best used.
   (a) Probability of failure on demand (POFOD)
   (b) Rate of occurrence of failures (ROCOF)
   (c) Availability (AVAIL)