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**Question 1 [CO1] [10 Points]**

Write a java program to solve the following. A hotel has two room types: Studio and Apartment. The price per night depends on the month number (1 = January, 5 = May, etc.).

Month Number	Month Name	Studio(USD)	Apartment(USD)
5	May	50	65
6	June	75	69
7	July	76	77
8	August	76	77
9	September	75	69
10	October	50	65

Only these 6 months are valid. No need to handle any other month number.

If more than 14 nights:

Month(s)	Studio Discount	Apartment Discount
May or October (5/10)	30% off	10% off
June or September (6/9)	20% off	10% off
July or August (7/8)	No discount	10% off

Input	Output
Enter month: 5 Enter Total Nights: 15	Apartment: 877.5 USD. Studio: 525.0 USD.
Enter month: 8 Enter Total Nights: 13	Apartment: 1001.0 USD. Studio: 988.0 USD.



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**Question 1 [C01] [10 Points]**

Write a java program to solve the following. A beach resort offers Bungalow and Villa rooms. Price per night depends on month number (5 = May, ..., 10 = October):

Month	Bungalow (USD)	Villa (USD)
5 (May)	55	80
6 (June)	85	120
7 (July)	95	135
8 (August)	95	135
9 (September)	85	120
10 (October)	55	80

Only these 6 months are valid. No need to handle any other month number.

**Extra Charge Rule (only if nights > 12)**

Month(s)	Bungalow Extra	Villa Extra
5 or 10 (May/Oct)	+5 USD/night	+8 USD/night
6 or 9 (Jun/Sep)	+3 USD/night	+8 USD/night
7 or 8 (Jul/Aug)	No extra	+8 USD/night

**Extra charge is added per night after base price.**

Input	Output
Enter month: 5 Enter nights: 15	Villa: 1320.0 USD. Bungalow: 900.0 USD.
Enter month: 7 Enter nights: 10	Villa: 1350.0 USD. Bungalow: 950.0 USD.



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**Question 1 [C01] [10 Points]**

In the mystical kingdom of **Numoria**, scholars have uncovered an ancient **P-digit Number** etched into a crystal tablet. Your task is to decipher its power by examining the number digit by digit. Scholars believe this number holds hidden power, unlocked only by a special digit **N**.

As you explore the crystal, examine the number digit by digit:

- If the digit **N** is found in an odd position of the number, the magic is revealed as the sum of all the digits in odd positions.
- If **N** is found in an even position, the magic is revealed as the sum of all the digits in even positions.
- If **N** is not found anywhere in the number, then no magic is possible.

Write a java program to print whether **N** was found and the resulting magical sum (or indicate that no magic is possible).

Sample Input 1	Sample output 1
Ancient Number: 345689 Special digit: 5	Special digit 5 is found in the 4th position. Magical sum is : 16  <b>Explanation:</b> As the number is found in an even position from the right, magical sum = 8 + 5 + 3 = 16
Sample input 2	Sample Output 2
Ancient Number: 93578 Special digit: 2	No Magic is possible



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**Question 1 [C01] [10 Points]**

In the enchanted land of **Eldoria**, a mysterious crystal has been discovered, inscribed with a **P-digit Ancient Number**. Scholars believe this number holds hidden power, unlocked only by a special digit **N**.

As you explore the crystal, examine the number digit by digit:

- If the special digit N is found in an odd position, the crystal awakens with magic equal to the product of all digits in odd positions.
- If N is found in an even position, the crystal's energy is revealed as the product of all digits in even positions.
- If N is not found, the crystal remains dormant, and no magic is possible.

Write a Java program to display whether N was found and the resulting magical product, or indicate that no magic is possible.

Sample Input 1	Sample output 1
Ancient Number: 345689 Special digit: 5	Special digit 5 is found in the 4th position. Magic number is : 120  <b>Explanation:</b> As the number is found in an even position from the right, magic number = 8 * 5 * 3 = 120
Sample input 2	Sample Output 2
Ancient Number: 93578 Special digit: 2	No Magic is possible