Array related problems (total 35 questions)

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<tr><td>1.</td><td>WAP that will take n integer numbers into an array, and then print all the integers into reverse order (from the last valid index to index 0).

<table><tr><th>Sample input</th><th>Sample output</th></tr><tr><td>5
1 2 3 4 5</td><td>5 4 3 2 1</td></tr><tr><td>6
2 8 3 9 0 1</td><td>1 0 9 3 8 2</td></tr></table></td><td>*</td></tr>
<tr><td>2.</td><td>WAP that will take n integer numbers into an array, and then sum up all the integers in that array.

<table><tr><th>Sample input</th><th>Sample output</th></tr><tr><td>5
1 2 3 4 5</td><td>15</td></tr><tr><td>6
2 8 3 9 0 1</td><td>23</td></tr></table></td><td>*</td></tr>
<tr><td>3.</td><td>WAP that will take n integer numbers into an array, and then sum up all the even integers in that array.

<table><tr><th>Sample input</th><th>Sample output</th></tr><tr><td>5
1 2 3 4 5</td><td>6</td></tr><tr><td>6
2 8 3 9 0 1</td><td>10</td></tr></table></td><td>*</td></tr>
<tr><td>4.</td><td>WAP that will take n integer numbers into an array, and then sum up all the even indexed integers in that array.

<table><tr><th>Sample input</th><th>Sample output</th></tr><tr><td>5
1 2 3 4 5</td><td>9</td></tr><tr><td>6
2 8 3 9 0 1</td><td>5</td></tr></table></td><td>*</td></tr>
</table>

5. WAP that will take n integer numbers into an array, and then reverse all the integers within that array. Finally print them all from 0 index to last valid index. **

Sample input	Sample output
5 1 2 3 4 5	5 4 3 2 1
6 2 8 3 9 0 1	1 0 9 3 8 2

6. WAP that will take n integer numbers into an array, and then find the maximum - minimum among them with its index position. **

Sample input	Sample output
5 1 2 3 4 5	Max: 5, Index: 4 Min: 1, Index: 0
6 2 8 3 9 0 1	Max: 9, Index: 3 Min: 0, Index: 4

7. WAP that will take n alphabets into an array, and then count number of vowels in that array. *

Sample input	Sample output
7 AKIOUEH	Count: 5
29 UNITEDINTERNATIONALUNIVERSITY	Count: 13

8. WAP that will take n integers into an array, and then search a number into that array. If found then print its index. If not found then print “NOT FOUND”. *

Sample input	Sample output
8 7 8 1 3 2 6 4 3 3	FOUND at index position: 3, 7
8 7 8 1 3 2 6 4 3 5	NOT FOUND

9. WAP that will take n integers into an array A, and then copy all numbers in reverse order from array A to another array B. Finally show all elements of both array A and B. *

Sample input	Sample output
8 7 8 1 3 2 6 4 3	Array A : 7 8 1 3 2 6 4 3 Array B : 3 4 6 2 3 1 8 7
3 3 2 1	Array A : 3 2 1 Array B : 1 2 3

10. WAP that will take n real numbers into an array, and then find the average of them. *

Sample input	Sample output
8 7 8 1 3 2 6 4 3	Average: 4.25
3 3 2 1	Average: 2.00

11. WAP that will first take n integers into an array A and then m integers into array B. Now swap all elements between array A and B. Finally show all elements of both array A and B. **

Sample input	Sample output
8 7 8 1 3 2 6 4 3 3 3 2 1	Array A : 3 2 1 Array B : 7 8 1 3 2 6 4 3

12. WAP that will take n positive integers into an array A. Now find all the integers that are divisible by 3 and replace them by -1 in array A. Finally show all elements of array A. *

Sample input	Sample output
8 7 8 1 3 2 6 4 3	7 8 1 -1 2 -1 4 -1
3 3 2 1	-1 2 1

13. WAP that will take n integers into an array A. Now sort them in ascending order within that array. Finally show all elements of array A. ***
Reference: http://en.wikipedia.org/wiki/Bubble_sort

Sample input	Sample output
8 7 8 1 3 2 6 4 3	1 2 3 3 4 6 7 8
3 3 2 1	1 2 3

14. WAP that will take n integers into an array A. Now find the median of those numbers. ***
Reference: http://www.mathsisfun.com/median.html

Sample input	Sample output
8 7 8 1 3 2 6 4 3	3.5
3 3 2 1	2

15. WAP that will take n integers into an array A. Now find the standard deviation of those numbers. Reference: http://www.mathsisfun.com/data/standard-deviation.html **

Sample input	Sample output
8 7 8 1 3 2 6 4 3	2.493
3 3 2 1	1.000

16. WAP that will take an integer as input and convert it into hexadecimal number. Save each digit of hexadecimal number into a character array. Finally show the hexadecimal number. **

Sample input	Sample output
23456	5BA0
15	F
10029	272D

17. WAP that will take n integers into an array A. Now remove all duplicates numbers from that array. Finally print all elements from that array. **

Sample input	Sample output
8 2 8 1 3 2 6 4 3	2 8 1 3 6 4
3 3 3 3	3
4 6 7 8 9	6 7 8 9

18. WAP that will take n integers into an array A and m positive integers into array B. Now find the intersection (set operation) of array A and B. **

Sample input	Sample output
8 7 8 1 5 2 6 4 3 6 1 3 6 0 9 2	1 2 6 3
3 1 2 3 2 4 5	Empty set

19. WAP that will take n integers into an array A and m positive integers into array B. Now find the union (set operation) of array A and B. **

Sample input	Sample output
8 7 8 1 5 2 6 4 3 6 1 3 6 0 9 2	7 8 1 5 2 6 4 3 0 9
3 1 2 3 2 4 5	1 2 3 4 5

20. WAP that will take n integers into an array A and m positive integers into array B. Now find the difference (set operation) of array A and B or (A-B). ******

Sample input	Sample output
8 7 8 1 5 2 6 4 3 6 1 3 6 0 9 2	7 8 5 4
3 1 2 3 2 4 5	1 2 3

21. WAP that will take 9 integers into a 3 by 3 array (2D) and show them as traditional matrix view. *****

Sample input	Sample output
9 8 7 6 5 4 3 2 1	9 8 7 6 5 4 3 2 1
1 1 1 2 2 2 3 3 3	1 1 1 2 2 2 3 3 3

22. WAP that will take (m x n) integers into a *m by n* array (2D) and print them both row-wise and column-wise. *****

Sample input (m,n)	Sample output
2 3 1 2 3 6 5 4	Row-wise: 1 2 3 6 5 4 Column-wise: 1 6 2 5 3 4
3 3 1 1 1 2 2 2 3 3 3	Row-wise: 1 1 1 2 2 2 3 3 3 Column-wise: 1 2 3 1 2 3 1 2 3

23. WAP that will take inputs of a 3 by 3 matrix into a 2D array. Now find the determinant of this matrix. http://www.mathsisfun.com/algebra/matrix-determinant.html *****

Sample input	Sample output
1 2 3 4 5 6 7 8 9	0

24. WAP that will take inputs of a n sized square matrix into a 2D array. Now show all the elements of its two diagonals. Reference: http://en.wikipedia.org/wiki/Main_diagonal *

Sample input	Sample output
5 1 2 3 4 5 5 4 3 2 1 2 2 2 2 2 6 7 8 9 0 1 9 3 7 4	Major diagonal: 1 4 2 9 4 Minor diagonal: 5 2 2 7 1

25. WAP that will take the size of an identity matrix from the user and generate the identity matrix into a 2D array. Finally display it.
Reference: http://en.wikipedia.org/wiki/Identity_matrix *

Sample input	Sample output
5	1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 0 1

26. WAP that will take inputs of two *m x n* sized matrix into two 2D array, suppose A and B. Now do C = A + B. Finally display all the elements from matrix / 2D array C. *

Sample input	Sample output
2 3 1 2 3 2 3 4 1 1 1 2 2 2	2 3 4 4 5 6

27. WAP that will take inputs of two *3 x 3* sized matrix into two 2D array, suppose A and B. Now do C = A * B (multiplication). Finally display all the elements from matrix / 2D array C. ***

Sample input	Sample output
1 2 3 4 5 6 7 8 9 2 2 2 2 2 2 1 1 1	9 9 9 24 24 24 39 39 39

28.	WAP that will take inputs of *m x n* sized matrix into a 2D array and find the maximum element with index locationfrom that matrix. **Sample input** / **Sample output** 3 3 1 2 3 4 5 6 2 9 2 Max: 9 Location: [2][1] 2 3 9 8 7 3 4 5 Max: 9 Location: [0][0]	*
29.	WAP that will take (n x n) integer inputs into a square matrix of dimension n (where n must be an odd number). Then calculate sum of the integers at first row, last row and two diagonals without overlap. Please see the sample input-output. **Sample input** / **Sample output** 5 1 2 3 4 5 2 3 4 1 6 3 4 9 6 7 4 2 6 7 8 5 4 3 2 1 52 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 23	**

30. WAP that will take (n x n) integer inputs into a square matrix of dimension n (where n must be an odd number). Then calculate sum of the integers based on following position pattern (consider only the boxed position during the sum). Please see the input-output. **

Sample input	Sample output
5 1 2 3 4 5 2 3 4 1 6 3 4 9 6 7 4 2 6 7 8 5 4 3 2 1	71
7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	25

31. WAP that will take (n x n) integer inputs into a square matrix of dimension n (where n must be an odd number). Then calculate sum of the integers based on following position pattern (consider only the boxed position during the sum). Please see the input-output. **

Sample input	Sample output
5 1 2 3 4 5 2 3 4 1 6 3 4 9 6 7 4 2 6 7 8 5 4 3 2 1	65
7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	33

32. WAP that will take (m x n) integer inputs into a matrix of dimension m x n. Now reverse that matrix within itself and display it. Reversal means swap 1st column with the nth column, swap 2nd column with the (n-1)th column and so on… **

Sample input	Sample output
3 3 1 2 3 4 5 6 2 9 2	3 2 1 6 5 4 2 9 2
2 6 1 2 3 4 5 6 9 8 7 6 5 4	6 5 4 3 2 1 4 5 6 7 8 9

33. WAP that will take (n x n) integer inputs into a square matrix of dimension n. Now determine whether the matrix is symmetric or not. **
Reference: http://en.wikipedia.org/wiki/Symmetric_matrix

Sample input	Sample output
3 1 7 3 7 4 5 3 5 6	Yes
2 1 3 4 2	No

34. WAP that will take (m x n) positive integer inputs into a matrix of dimension m x n. Now replace all the duplicate integers by -1 in that matrix. Finally display it. ***

Sample input	Sample output
3 3 1 7 3 7 4 5 3 5 6	1 7 3 -1 4 5 -1 -1 6
2 6 2 2 2 2 2 2 6 5 4 3 2 1	2 -1 -1 -1 -1 -1 6 5 4 3 -1 1

35.	WAP that will take (m x n) integer inputs into a matrix of dimension m x n. Now just simply add all the integers in that matrix and show the result. **Sample input** 3 3 1 7 3 7 4 5 3 5 6 **Sample output** 41 **Sample input** 2 6 2 2 2 2 2 2 6 5 4 3 2 1 **Sample output** 33	*