List Assignment Question

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1. Find the sum of even numbers only.
Input: `[10, 13, 15, 18, 20]`
Output: `48`

2. Multiply all elements in a list.
Input: `[2, 3, 4]`
Output: `24`

3. Find the difference between max and min in a list.
Input: `[10, 20, 5, 40]`
Output: `35`

4. Extract first 4 elements of a list.
Input: `[5, 8, 12, 20, 25, 30]`
Output: `[5, 8, 12, 20]`

5. Print elements in reverse order (without using reverse or slicing)
Input: `[1, 2, 3]`
Output: `3 2 1`

6. Print numbers greater than 50.
Input: `[20, 55, 80, 30]`
Output: `[55, 80]`

7. Remove all odd numbers.
Input: `[2, 3, 4, 5, 6]`
Output: `[2, 4, 6]`

8. Convert list of strings to uppercase.
Input: `['hello', 'world']`
Output: `['HELLO', 'WORLD']`

9. Convert string of numbers into list.
Input: `"12345"`
Output: `['1', '2', '3', '4', '5']`

10. Calculate average excluding highest and lowest value.
Input: `[10, 20, 30, 40, 50]`
Output: `30.0`

11. Find product of numbers at even index positions.
Input: `[2, 3, 4, 5, 6]`
Output: `48` (2×4×6)

12. Count number of vowels in a list of characters.
Input: `['a','b','e','i','o']`
Output: `4`

13. Remove all vowels from a list of characters.
Input: `['h','e','l','l','o']`
Output: `['h', 'l', 'l']`

14. Find second smallest number.
Input: `[8, 2, 5, 1, 9]`
Output: `2`

15. Sort list without using `sort()` or `sorted()`.
Input: `[5, 2, 8, 1]`
Output: `[1, 2, 5, 8]`

16. Print diagonal elements from 3x3 matrix.
Input: `[[1,2,3],[4,5,6],[7,8,9]]`
Output: `[1, 5, 9]`

17. Sum of all elements in nested list.
Input: `[[1, 2], [3, 4], [5, 6]]`
Output: `21`

18. Replace all 'a' with 'z' in list of characters.
Input: `['a','b','c','a']`
Output: `['z','b','c','z']`

19. Find number of times '5' appears in list.
Input: `[5,5,3,2,5]`
Output: `3`

20. Find all pairs with sum greater than 10.
Input: `[2, 8, 5, 7]`
Output: `[(2,8),(2,7),(8,5),(8,7),(5,7)]`

21. Create list of multiples of 4 upto 40.
Output: `[4, 8, 12, 16, 20, 24, 28, 32, 36, 40]`

22. Create pattern list `[1,2,2,3,3,3,4,4,4,4]`
Output: `[1, 2, 2, 3, 3, 3, 4, 4, 4, 4]`

23. Find cumulative product.
Input: `[1, 2, 3, 4]`
Output: `[1, 2, 6, 24]`

24. Count numbers between 50 and 100.
Input: `[23, 76, 98, 45, 50]`
Output: `3`

25. Create all possible pairs from `[1,2]` and `[3,4]`
Output: `[(1,3), (1,4), (2,3), (2,4)]`

26. Find common elements between 3 lists.
Input: `[1,2,3]`, `[2,3,4]`, `[3,4,5]`
Output: `[3]`

27. Find length of longest word in list.
Input: `['hi', 'world', 'python']`
Output: `6`

28. Replace duplicate values with `-1`.
Input: `[1,2,2,3]`
Output: `[1,2,-1,3]`

29. Convert list of integers to list of their squares.
Input: `[2,3,4]`
Output: `[4,9,16]`

30. Split list into 2 halves.
Input: `[1,2,3,4,5,6]`
Output: `([1,2,3],[4,5,6])`

31. Count how many numbers are divisible by 5.
Input: `[5, 10, 13, 20, 7]`
Output: `3`

32. Replace negative numbers with 0.
Input: `[2, -3, 5, -6]`
Output: `[2, 0, 5, 0]`

33. Find product of numbers at odd index positions.
Input: `[3, 4, 5, 6]`
Output: `4×6 = 24`

34. Find sum of digits of all numbers in list.
Input: `[23, 45, 67]`
Output: `2+3+4+5+6+7 = 27`

35. Find minimum and maximum element without using min(), max().
Input: `[10, 25, 5, 70]`
Output: `5, 70`

36. Move all zeroes to the end.
Input: `[0, 1, 0, 3, 0, 5]`
Output: `[1, 3, 5, 0, 0, 0]`

37. Find elements that appear only once.
Input: `[2, 2, 3, 4, 4, 5]`
Output: `[3, 5]`

38. Separate even and odd numbers.
Input: `[1, 2, 3, 4, 5]`
Output: `Even:[2,4]`, `Odd:[1,3,5]`

39. Swap first and last elements.
Input: `[1, 2, 3, 4]`
Output: `[4, 2, 3, 1]`

40. Sum of largest 2 numbers.
Input: `[5, 20, 12, 8]`
Output: `32`

41. Remove all occurrences of a particular element.
Input: `[2, 3, 4, 2, 5]` (Remove `2`)
Output: `[3, 4, 5]`

42. Find difference between sum of even and odd numbers.
Input: `[1, 2, 3, 4]`
Output: `(2+4)-(1+3) = 2`

43. Find common elements between two lists.
Input: `[1, 2, 3, 4]`, `[3, 4, 5, 6]`
Output: `[3, 4]`

44. Remove duplicate elements.
Input: `[1, 2, 2, 3, 3, 4]`
Output: `[1, 2, 3, 4]`

45. Find second largest element.
Input: `[5, 9, 8, 7]`
Output: `8`

46. Concatenate two lists index-wise.
Input: `[1, 2, 3]`, `[4, 5, 6]`
Output: `[5, 7, 9]`

47. Split list into two equal halves.
Input: `[1, 2, 3, 4, 5, 6]`
Output: `([1, 2, 3], [4, 5, 6])`

48. Check if two lists are equal (same elements, same order).
Input: `[1,2,3]` and `[1,2,3]`
Output: `True`

49. Merge two sorted lists into one sorted list.
Input: `[1,3,5]` and `[2,4,6]`
Output: `[1,2,3,4,5,6]`

50. Find all numbers between 10 and 50 divisible by 7.
Output: `[14, 21, 28, 35, 42, 49]`

51. Remove all strings with length greater than 5.
Input: `['apple','cat','banana','dog']`
Output: `['apple', 'cat', 'dog']`

52. Count total characters in all string elements of list.
Input: `['abc','de','fgh']`
Output: `8`

53. Pair each number with its square.
Input: `[2,3,4]`
Output: `[(2,4),(3,9),(4,16)]`

54. Reverse each word in list of strings.
Input: `['abc','xyz']`
Output: `['cba','zyx']`

55. Remove elements at even index positions.
Input: `[10,20,30,40,50]`
Output: `[20,40]`

56. Replace each element by its cube.
Input: `[2,3]`
Output: `[8,27]`

57. Extract numbers greater than average of list.
Input: `[1,3,5,7,9]`
Average: `5`
Output: `[7,9]`

58. Remove first occurrence of minimum value.
Input: `[5,3,1,2,1,4]`
Output: `[5,3,2,1,4]`

59. Insert 100 at index 2.
Input: `[1,2,3,4]`
Output: `[1,2,100,3,4]`

60. Check if list is palindrome.
Input: `[1,2,3,2,1]`
Output: `True`