

Worksheet – Methods

1. Write a program in Java, which displays the following menu to the user:

- a. Palindrome Number
- b. Perfect Number
- c. Pattern Display
- d. Calculate Average score

Based on the user's choice, do the required operation and display appropriate result. Each operation should be carried out using a method.

- A perfect number is one whose sum of the proper divisors is equal to the number itself. For example, 6.
Proper divisors of 6 are 1, 2, and 3 . Since $1+2+3 = 6$, 6 is a perfect number.

- Display the following pattern for n rows, if the user chooses option 3:

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1
22
333
444
```

- For option 4, the method should calculate the average score based on scores of 4 classes. Maximum score should be 100 for each class.
- Your program should continue to display the menu as long as user does not want to exit.