1. Declare a variable: Write a program to declare an integer variable x and assign the value 5 to it. Then print the value of x.
2. Declare a constant: Create a constant variable PI to hold the value of π (3.14159). Print the value of PI.
3. Basic arithmetic operators: Write a Java program to declare two variables a = 10 and b = 20, and print the result of a + b, a - b, a \* b, and a / b.
4. Declare and initialize: Declare a char variable to store the letter 'A' and an integer variable num to store 100. Print both values.
5. String concatenation: Create two String variables firstName and lastName. Assign your first and last names to them and print them as a full name (concatenate the strings).
6. Data type casting: Write a program that declares a double variable d = 9.7 and cast it into an integer variable. Print both the double and integer values.
7. Modulo operator: Declare two integer variables x = 15 and y = 4. Use the modulo operator to find the remainder when x is divided by y, and print the result.
8. Relational operators: Write a Java program that compares two integers num1 and num2 using relational operators (<, >, <=, >=, ==, !=) and prints the results.
9. Compound assignment: Declare a variable x = 5. Use compound assignment operators (+=, -=, \*=, /=, %=) to modify and print the value of x step by step.
10. Boolean expressions: Write a program to declare two boolean variables a = true and b = false. Perform logical operations (&&, ||, !) and print the results.
11. Swap two variables without a third variable: Write a Java program to swap the values of two variables x and y without using a third variable.
12. Area of a circle using a constant: Write a program to calculate the area of a circle using the constant PI. Take the radius as input from the user and output the result.
13. Convert temperature: Write a Java program that converts Fahrenheit to Celsius. Use the formula: C = (F - 32) \* 5/9. Take input for Fahrenheit and print the Celsius result.
14. Simple interest calculation: Write a Java program to calculate simple interest using the formula SI = (P \* R \* T) / 100. Use variables for P (principal), R (rate of interest), and T (time).
15. Quadratic equation solution: Write a program to solve a quadratic equation of the form ax^2 + bx + c = 0. Use the quadratic formula to find the roots and display them.
16. Leap year check: Write a Java program to check if a year entered by the user is a leap year. Use the condition: A year is a leap year if it is divisible by 4, but not by 100, unless it is also divisible by 400.
17. Prime number check: Write a Java program that takes an integer as input and checks if it is a prime number.
18. Reverse a number: Write a program to reverse an integer number. For example, if the input is 1234, the output should be 4321.
19. Find maximum of three numbers: Write a Java program to take three integer inputs and find the maximum of the three using conditional operators.
20. Palindrome check: Write a program that checks if a given integer or string is a palindrome. A palindrome is a word or number that reads the same forward and backward.