Question Set 1: Basic Input/Output and Operations

Note: Concentrate on choosing the right data types for the variables/constants. Always use constants when possible. Follow proper naming conventions and give meaningful names for the variables/constants.

1. Given two integers, write a program to display their sum, difference, and product.
2. Write a program to find the value of *a* raised to the power of *b*, where *a & b* are positive integers. Use Math.Pow()
3. Write a program to find the volume of a rectangular water tank. Hint: (l x w x h)
4. Find the perimeter of a circle given the radius. Hint: (2 x Pi x r). Use Math.PI.
5. Given a numerator and denominator, find the quotient and remainder.
6. Program to Find the Square of a given number (hint: a * a or Math.Pow(a, 2))
7. Program to find the square root of a given number. Hint: Use Math.Sqrt() function.
8. Program to Calculate the Area of a Triangle. Hint: (1/2 x (b x h))
9. Program to Convert Kilometres to Miles. Hint: (1 mile = 1.60934 km or 1 km = 0.621371 mile)
10. Program to Convert Celsius to Fahrenheit. Hint: F= (9/5 * C) + 32
11. Program to Swap Two Numbers
12. Program to Swap Two Numbers without using temporary variable
13. Program to Swap Two Numbers without causing overflow
14. Find the area of a field in acres, whose length and width are given in feet. Hint: (1 acre= 43,560 sq ft.)
15. Program to Find the Sum of Natural Numbers up to N. N is a positive integer. Hint: (N x (N+1)/2)
16. Get three numbers as input from the user and find their average.
17. Write a program to calculate the tip to be provided to the waiter, at 5% of bill amount.
18. Given the total amount paid and the tax percentage, calculate the actual amount of the product before tax, backwards.
19. Given the Basic Pay, DA% and TA%, PF @ 8% deduction, calculate the Salary. Hint: (Salary = Basic Pay + DA + TA – PF)
20. Write a program to calculate simple interest. Hint: (P x n x r/100)
21. Write a program to compute compound interest. Hint: (P * ((1 + r/n) ^ (nt))), where P is the initial principal balance, r is the interest rate, n is the number of times interest is compounded per time period and t is the number of time periods. ^ refers to Power.
22. Given the height of a person in centimetres, print the height in feet & inches. (1 inch= 2.54 cm)
23. Program to find BMI given height in meters and weight in kilograms. Hint: Weight/ (Height x Height)
24. Program to read the roll no, name and the marks for three subjects and calculate the total and average of those marks. Print the rollno, name, average and total marks as output.
25. Given a Truck that can carry N Tons of Bricks per trip, how many trips are required to transport K Tons of Bricks.
26. **Program to Generate a Random Number between 1 and N. Hint: Use Next() method from Random Class.**