**OPERATORS**

1. A factory produces two types of products: Product A and Product B. The factory has a maximum of 800 hours of machine time per week. Product A requires 4 hours of machine time per unit, while Product B requires 5 hours of machine time per unit. Each unit of Product A generates 100 dollars in profit, while each unit of Product B generates 150 in profit. Write a program that asks the user for the number of units of each product to produce, and then calculates and displays the total profit.
2. If a train travels at a speed of 80 km/h for 5 hours, how far will it have traveled? Write a program that prompts the user to enter the speed and time, and calculates the distance.
3. Write a program that prompts the user to enter two numbers and calculates their sum.  
   A bottle of water costs $1.50. Write a program that prompts the user to enter the number of bottles they want to buy and calculates the total cost.
4. A rectangle has a length of 10cm and a width of 5cm. Write a program that calculates the area and perimeter of the rectangle.  
   A student scored 80% on a test. Write a program that prompts the user to enter the total marks and calculates the student's score in marks.
5. A grocery store offers a 5% discount on all orders above $100. Write a program that prompts the user to enter the total order amount and calculates the discount if applicable.  
   Medium:
6. A company pays its employees based on the number of hours worked and the hourly rate. Write a program that prompts the user to enter the number of hours worked and the hourly rate, and calculates the total pay.
7. A farmer has a rectangular field that is 20m by 30m. He wants to build a fence around the field. Write a program that calculates the length of the fence needed.
8. A group of friends wants to share a pizza. Write a program that prompts the user to enter the number of slices in the pizza and the number of people, and calculates the number of slices each person gets.
9. A train travels from city A to city B, which are 200km apart. The train travels at a speed of 100 km/h for the first half of the journey, and then at a speed of 50 km/h for the second half. Write a program that calculates the total time taken for the journey.  
   A store sells shirts at $25 each. If a customer buys more than 5 shirts, they get a 10% discount. Write a program that prompts the user to enter the number of shirts they want to buy and calculates the total cost.
10. Write a program that prompts the user to enter a number and calculates its factorial.