Problem 1: Data Types

Problem: Declare a variable `age` and assign your age to it. Print the data type of the variable.

Steps:
1. Declare a variable named `age`.
2. Assign your age to the variable.
3. Use the `type()` function to find the data type of the `age` variable.
4. Print the result.

Problem 2: Arithmetic Operators

Problem: Calculate the area of a rectangle with a length of 10 units and a width of 5 units.

Steps:
1. Define variables `length` and `width` with values 10 and 5 respectively.
2. Use the formula for the area of a rectangle: `area = length * width`.
3. Calculate the area using the defined variables.
4. Print the result.

Problem 3: Comparison Operators

Problem: Compare two numbers 15 and 20. Print whether the first number is less than the second number.

Steps:
1. Define variables `num1` and `num2` with values 15 and 20 respectively.
2. Use the `<` operator to compare `num1` and `num2`.
3. Print the result of the comparison.

Problem 4: Assignment Operators

Problem: Increment a variable `count` by 3 and then multiply it by 2. Print the final value of the variable.

Steps:
1. Declare a variable named `count`.
2. Increment the `count` variable by 3 using the `+=` assignment operator.
3. Multiply the `count` variable by 2 using the `*=` assignment operator.
4. Print the final value of the `count` variable.

Problem 5: Data Types

Problem: Declare a variable `name` and assign your name to it. Print the length of the name.

Steps:
1. Declare a variable named `name`.
2. Assign your name to the variable.
3. Use the `len()` function to find the length of the `name` variable.
4. Print the result.

Problem 6: Arithmetic Operators

Problem: Calculate the total cost of buying 8 notebooks at $2.50 each and 5 pencils at $0.75 each.

Steps:
1. Define variables `notebook_price` and `pencil_price` with values 2.50 and 0.75 respectively.
2. Define variables `num_notebooks` and `num_pencils` with values 8 and 5 respectively.
3. Calculate the total cost of notebooks: `total_notebook_cost = notebook_price * num_notebooks`.
4. Calculate the total cost of pencils: `total_pencil_cost = pencil_price * num_pencils`.
5. Add the two total costs to get the final total cost.
6. Print the result.

Problem 7: Comparison Operators

Problem: Compare two strings "apple" and "banana". Print whether they are not equal.

Steps:
1. Define variables `fruit1` and `fruit2` with values "apple" and "banana" respectively.
2. Use the `!=` operator to compare the two strings.
3. Print the result of the comparison.

Problem 8: Assignment Operators

Problem: Initialize a variable `distance` with a value of 100. Decrease it by 20 using the `-=` assignment operator. Then, square the resulting value.

Steps:
1. Declare a variable named `distance` and assign it a value of 100.
2. Decrease the `distance` variable by 20 using the `-=` assignment operator.
3. Square the updated `distance` value using the `**=` assignment operator.
4. Print the final value of the `distance` variable.

Problem 9: Data Types

Problem: Declare a variable `is_happy` and assign a boolean value `True` to it. Convert the boolean value to an integer and print it.

Steps:
1. Declare a variable named `is_happy`.
2. Assign the boolean value `True` to the variable.
3. Use the `int()` function to convert the boolean value to an integer.
4. Print the converted integer value.

Problem 10: Arithmetic Operators

Problem: Calculate the average of three test scores: 85, 92, and 78.

Steps:
1. Define variables `score1`, `score2`, and `score3` with values 85, 92, and 78 respectively.
2. Calculate the sum of the three scores: `total_score = score1 + score2 + score3`.
3. Calculate the average: `average_score = total_score / 3`.
4. Print the average score.

Problem 11: Comparison Operators

Problem: Compare the result of adding 10 and 15 with the result of multiplying 5 by 5. Print whether the first result is greater than or equal to the second result.

Steps:
1. Calculate the sum of 10 and 15, store in variable `sum_result`.
2. Calculate the product of 5 and 5, store in variable `product_result`.
3. Use the `>=` operator to compare `sum_result` and `product_result`.
4. Print the result of the comparison.

Problem 12: Assignment Operators

Problem: Given a variable `value` with an initial value of 7, multiply it by 4 using the `*=` assignment operator, then add 12 using the `+=` assignment operator.

Steps:
1. Declare a variable named `value` with an initial value of 7.
2. Multiply the `value` variable by 4 using the `*=` assignment operator.
3. Add 12 to the updated `value` variable using the `+=` assignment operator.
4. Print the final value of the `value` variable.

Problem 13: Data Types

Problem: Declare a variable `temperature` and assign a floating-point value 98.6 to it. Convert the temperature to a string and print it.

Steps:
1. Declare a variable named `temperature`.
2. Assign the floating-point value 98.6 to the variable.
3. Use the `str()` function to convert the temperature to a string.
4. Print the converted string value.

Problem 14: Arithmetic Operators

Problem: You have $500 and want to split it equally among 3 friends. Calculate the amount each friend will receive and the remaining amount.

Steps:
1. Define variables `total_amount` with a value of 500 and `num_friends` with a value of 3.
2. Calculate the amount each friend will receive: `amount_per_friend = total_amount / num_friends`.
3. Calculate the remaining amount: `remaining_amount = total_amount % num_friends`.
4. Print the amount each friend will receive and the remaining amount.

Problem 15: Comparison Operators

Problem: Compare the result of multiplying 8 by -2 with the absolute value of -16. Print whether the first result is less than the second result.

Steps:
1. Calculate the result of multiplying 8 by -2, store in variable `product_result`.
2. Calculate the absolute value of -16 using the `abs()` function, store in variable `abs_value`.
3. Use the `<` operator to compare `

product_result` and `abs_value`.
4. Print the result of the comparison.