

1. **income** and **expense** are of type integer and the values are **8** and **6** respectively. What is the value of each of the following expressions?

Statement	Value(s)
i. income + expense * 2	$8 + 6 * 2 = 8 + 12 = 20$
ii. income + 4 – expense / 2	$8 + 4 - 6 / 2 = 8 + 4 - 3.0 = 9.0$
iii. (income + expense) * 2	$(8 + 6) * 2 = 14 * 2 = 28$
iv. income \ expense	$8 \setminus 6 = 1$
v. income – 3 * 2 + expense	$6 - 3 * 2 + 8 = 6 - 6 + 8 = 8$
vi. 4 * ((income – expense) + 2) + 10	$4 * ((8 - 6) + 2) + 10 = 4 * (2 + 2) + 10 = 4 * 4 + 10 = 16 + 10 = 26$
vii. expense + 4 * income % 4	$6 + 4 * 8 \% 4 = 6 + 4 * 0 = 6 + 0 = 6$
viii. income / expense + 2	$8 / 6 + 2 = 1.33333333 + 2 = 3.33333333$
ix. expense * 10 % 100	$6 * 10 \% 100 = 6 * 10 = 60$
x. expense \ income + 100	$6 \setminus 8 + 100 = 0 + 100 = 100$

2. Using proper variable names and computer operators, set up an equation to calculate the following:

- i. The outer surface area of a rectangular-shaped jewelry box without the lid

$$\text{surfaceArea} = (\text{length} * \text{width}) + (2 * (\text{length} * \text{height})) + (2 * (\text{width} * \text{height}))$$

- ii. The value in pounds given the value in kilograms. (Note: 1 pound = 0.45 kilogram)

$$\text{valuePounds} = \text{valueKilo} / 0.45$$

- iii. The percentage of marks obtained out of the total mark.

$$\text{percentage} = (\text{marksObtained} / \text{totalMark}) * 100$$

3. Body Mass Index (BMI) is a measure of health based on height and weight. It can be calculated by taking your weight in kilograms and dividing it by the square of your height in meters. You are going to create a program that will get the weight in pounds and height in inches and then display the BMI value. (Hint: kilograms per pound is 0.45359237 and meters per inch is 0.0254) List all the variables and its data types that will be used in this program. Write the equations used in this program.

Variables Needed and its Data Type:	
Variable	Data Type
weightInPounds	Float
heightInInch	Float

Equation:

$$\text{BMI} = (\text{weightInPounds} * 0.45359237) / ((\text{heightInInch} * 0.0254) ** 2)$$