



ASSIGNMENT (2)

1. Write a program that calculates the difference between two float numbers (5.2 and 2.7).
2. Write a program that calculates the average of two integers (5 and 6).
*Hint: Take into consideration that truncation occurs when **integer division** is performed. i.e. $11 / 2 = 5$, but $11 / 2.0 = 5.5$*
3. Write a program that calculates the sum, average and product of four integers (12, 15, 13, 3). The output console should appear as follows:
Sum is 43
Average is 10.75
Product is 7020
4. Write a program that prints the diameter, area and circumference of a circle with a radius of 5.25 cm. Use the constant value 3.14 for pi (π).
Hint: diameter = $2r$ area = πr^2 circumference = $2\pi r$
5. Write a program that calculates and prints both the arithmetic mean and the harmonic mean of the two integers x and y, where x=12 and y=14.
Harmonic mean = $\frac{2}{1/x + 1/y}$ Arithmetic mean = $\frac{x+y}{2}$
6. Given that a=6, b=7, c=2, and d=5, figure out the value of (x) for the following expressions, and comment on each:
 - 1) double x=a*5.0;
 - 2) double x=a/b;
 - 3) int x=d/c;
 - 4) double x=1.0*d/c;
 - 5) double x=d/c*1.0;
 - 6) int x=(a+b)/(c*d);
 - 7) int x=a+b/c*d;
 - 8) double x=(a+b)/c*d;
 - 9) double x=1.0*(a+b)/(c*d);
 - 10) double x=(a+b)/(c*d)*1.0;
 - 11) int x=(a/(d-c)+b)*(c-d);
 - 12) int x=(a/d-c+b)*c-d;

Take into consideration that:

- Parentheses (Brackets) have the highest priority over any other operation.
- Division and multiplication have priority over addition and subtraction.
- If two operators have the same priority, the expression is evaluated from left-to-right.
- Truncation occurs when integer division is performed.