

C++ Programming

Variables Homework 3

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Problem #1: Swapping 3 numbers!

- Write a code to swap 3 numbers
- Let say we have numbers $a = 115, b = 20, c = 301$
- We wanna their final values to be: $a = 20, b = 301, c = 115$
- Challenge: Do it in 4 lines

```
4 int main() {  
5     int num1, num2, num3, temp = -1;  
6  
7     cin>>num1>>num2>>num3;  
8     //4 lines  
9     cout<<num1<<" "<<num2<<" "<<num3<<"\n";  
10 }
```

Problem #2: Print Me

- Write a program that reads 2 integers A, B
 - B is either -1 or 1
 - If -1, print $2*A+1$
 - If 1, print $A*A$
- Hint
 - You need to think in a **simple 1 line formula** for the output

Problem #3: Sum numbers from 1 to N

- Write a program that reads integer N and Print the sum from 1 to N
 - E.g. If input N = 5, then Output is: 15
 - Why? As $1+2+3+4+5 = 15$
 - Below table of more values
 - $3 \Rightarrow 6$ ($1+2+3$)
 - $4 \Rightarrow 10$ ($1+2+3+4$)
 - $5 \Rightarrow 15$ ($1+2+3+4+5$)
- You need to find a **simple 1 line formula** to solve the problem :)
 - Hint: Let N = 8. Write numbers from 1 to 8
 - What is the sum of 1st and 8th number? sum of 2nd and 7th? And so on
 - Your formula should be good for even and odd N. Be careful programmer!
 - What is the maximum N after it overflow occurs? Recall int max is **2147483647**

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”