COP 2930 - Introduction to Computing
For Loop - Suggested Exercises

Objectives:
1. Use a for loop to condense code which repeats similar steps.
2. Practice adjusting the loop elements as necessary for the problem statement.

1) Write a program that asks the user for a positive even integer input n, and the outputs the sum 2+4+6+8+...+n, the sum of all the positive even integers up to n.

2) Ask the user to enter two positive integers under 10: a base and an exponent. Without using the ** operator of the pow function, calculate the value of the base raised to the power of the exponent.

3) Write a program to take in a positive integer n > 1 from the user and print out whether or not the number the number is a perfect number, an abundant number, or a deficient number. A perfect number is one where the sum of its proper divisors (the numbers that divide into it evenly not including itself) equals the number. An abundant number is one where this sum exceeds the number itself and a deficient number is one where this sum is less than the number itself. For example, 28 is perfect since $1 + 2 + 4 + 7 + 14 = 28$, 12 is abundant because $1 + 2 + 3 + 4 + 6 = 16$ and 16 is deficient because $1 + 2 + 4 + 8 = 15$. **Hint: Use mod (%) to determine if one number evenly divides into another!**