Name: _____ Section: _____

Day 09b – Recursion
In class recursion practice – Logic and coding

1) Recursively sum numbers from 1 to the number entered on the command line. The recursion part is to call the recursive method with "number – 1". This is similar to the factorial code. Use the space below the question to work out and pseudocode how this and the next problem would work.

Problem 2 is on the next sheet.

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2) Convert a number of base 10 to any other base. The command line takes a base 10 number and the base to convert the number to. Calculations are as follows:

java BaseConvert 13 2 *converts 13 to base 2*

13/2 = 6 Remainder **= 1**

Recursive call with 13/2 and 2

6 / 2 = 3 Remainder **= 0**
3 / 2 = 1 Remainder **= 1**
1 / 2 = 0 Remainder **= 1**
When dividend is 0, no more dividing

Read mod numbers from bottom to top
"1 1 0 1" = 13 (in base 10) converted to base 2

Hint: This may sound confusing, but try the calculations, print the results, see what is printed. Work through the recursive part by hand below first, then code.

Try it 1:
Number = 431 to base 8
431/8 = _____Remainder = _____

_____/8 = _____Remainder = _____

_____/8 = _____Remainder = _____

Result: _____ Did you get 657?

Try it 2:
Number = 431 to base 16
431/16 = _____Remainder = _____

_____/16 = _____Remainder = _____

_____/16 = _____Remainder = _____

Result: _____

3) Write the code for Part 1 and part 2 above.

Instructor/TA signoff: _____