MITx: 6.00.1x Introduction to Computer Science and Programming Using Python

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## PROBLEM 4 (10 points possible)

Write a simple procedure, myLog(x, b), that computes the logarithm of a number x relative to a base b. For example, if x = 16 and b = 2, then the result is 4 - because  $2^4 = 16$ . If x = 15 and b = 3, then the result is 2 - because  $3^2$  is the largest power of 3 less than 15.

In other words, [myLog] should return the largest power of b such that b to that power is still less than or equal to x.

x and b are both positive integers; b is an integer greater than or equal to 2. Your function should return an integer answer.

Do **not** use Python's log functions; instead, please use an iterative or recursive solution to this problem that uses simple arithmatic operators and conditional testing.

Note: You will only get ten checks. Use these judiciously.

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