Name: _____ Date: 11.11.2021

x^y

This program will input two integers, and calculate the first number to the power of the second. Work through the test from the beginning. Your program should build and grow – do not start new program for each point. You may use any resources that you have created/class resources for this test. **Do not** use the Internet to search for programming help.

Instructions	***Program Display***
1. Begin a new program and output your name (screen output).	`James Gosling`
2. Input two numbers.	`Enter the base : 2` `Enter the exponent: 8`
3. Make your program stop if the base is zero. If you want, use `System.exit(0);` to stop.	`Enter the base : 0` `>Base = zero. Nothing to do.`

4. Input both base and exponent. Repeat if the input > 10.	`Enter the base : 22`
	`Enter number <= 10. Enter the base: 2`
	`Enter the exponent: 11`
	`Enter number <= 10. Enter the exponent: 8`

5. Warn if the exponent is negative, and end the program if it is.	`Enter the base : 2`
	`Enter the exponent: -8`
	`Warning: exponent should be positive`

6. Calculate and output the result of the operation. *DO NOT USE* *`Math.pow()`*	`2 to the power of 8 = 256`

7. If the exponent is negative, calculate the power as a fraction and decimal as well, as shown→	`Enter the base : 2`
	`Enter the exponent: -8`
	`2 to the power of -8 = 1/256 = 0.00390625`

8. Repeat the whole process until zero (0) is input as a base.	`Enter the base : 2`
	`Enter the exponent: 10`
	`2 to the power of 10 = 1024`
	`. . .`
	`Enter the base : 0`

9. Beautify the output of x^{-y} as shown (for negative exponents only), using fraction format:
 	
`1`
`----- = (result)`
`x^y`
	`Enter the base : 2`
	`Enter the exponent: -10`
	`2 to the power of -10 =`
	
	`1`
	`----- = 9.765625E-4`
	`2^10`
	
	`Enter a base : 10`
	`Enter an exponent: -4`
	`10 to the power of -4 =`
	
	`1`
	`----- = 0.0001`
	`10^ 4` ↓

Instructions	***Program Display***

10. Beautify the output of x^{-y} for negative exponents in full using fraction format as shown.
`  1`
`--- =`
`x^y`
 	
`  1`
`----- = (result)`
`power`
	`Enter the base     = 10`
	`Enter the exponent = -10`
	
	`10 to the power of -10 =`
	
	`  1`
	`----- =`
	`10^10`
	
	`     1`
	`----------- = 1.0E-10`
	`10000000000`