

Objective

Yesterday's challenge taught you to manage exceptional situations by using *try* and *catch* blocks. In today's challenge, you're going to practice throwing and propagating an exception. Check out the [Tutorial](#) tab for learning materials and an instructional video!

Task

Write a *Calculator* class with a single method: `int power(int,int)`. The *power* method takes two integers, *n* and *p*, as parameters and returns the integer result of n^p . If either *n* or *p* is negative, then the method must throw an exception with the message: `n and p should be non-negative`.

Note: Do not use an access modifier (e.g.: `public`) in the declaration for your *Calculator* class.

Input Format

Input from stdin is handled for you by the locked stub code in your editor. The first line contains an integer, *T*, the number of test cases. Each of the *T* subsequent lines describes a test case in 2 space-separated integers denoting *n* and *p*, respectively.

Constraints

- No Test Case will result in overflow for correctly written code.

Output Format

Output to stdout is handled for you by the locked stub code in your editor. There are *T* lines of output, where each line contains the result of n^p as calculated by your *Calculator* class' *power* method.

Sample Input

```
4
3 5
2 4
-1 -2
-1 3
```

Sample Output

```
243
16
n and p should be non-negative
n and p should be non-negative
```

Explanation

T = 4

*T*₀: 3 and 5 are positive, so *power* returns the result of 3^5 , which is 243.

*T*₁: 2 and 4 are positive, so *power* returns the result of 2^4 , which is 16.

*T*₂: Both inputs (−1 and −2) are negative, so *power* throws an exception and `n and p should be non-negative` is printed.

*T*₃: One of the inputs (−1) is negative, so *power* throws an exception and `n and p should be non-negative` is printed.