Assignment 2

$$2^{15} = 32,768 \text{ and } 3+2+7+6+8 = 26$$

Write a program `product-digit-sum.cpp` that computes $a^b = n$ and then the sum of the digits in `n`. Whatever progress you have made in implementing this program will be discussed at the next synchronous class meeting.

You should *not* use the math module. Your program should have a function `pow(a, b)` that implements the computation for a^b manually. Although the user may enter negative numbers, this should be treated as invalid / unsupported inputs. So, `pow(a, b)` takes positive integers only.

Sample Output:
```
user@machine:solution$ ./pds
a: 2
b: 15
2^15 = 32768
Sum Of Digits: 26
```

Submission: Your program will be submitted using canvas and git + github.

1) You should create a private `github.com` repository (repo) with your code in it. You may need to create a github user account and a github repository. To achieve this. The name you choose for the repo and your username are arbitrary but I suggest "HW2" as the repo name.

2) Your repository on github.com should be **private** and you should add my account as a collaborator by going to "settings" → "manage access" → "invite collaborator" and entering my username: `fmresearchnovak`

3) On canvas you should upload a link to this github repository
`https://github.com/fmresearchnovak/HW2.git`

I will grade the final commit made before the due-date. This means that you can actually submit on canvas at any time before the deadline, and still make changes (new commits) to the code.