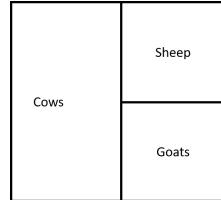


Farmer Brown wants to build pens for cows, sheep, and goats, and he has 200 feet of fencing to do this. He wants to put all three pens in a single rectangular region, and he has come up with two ways he could arrange this.



Option 1



Option 2

In building these pens, he wants the goats and sheep to have the same area, but the cows should have double that area. There also needs to be fence between each of the pens. Which of the two options gives a larger maximum area for each of the different animal types? **Hint:** You'll need to solve two different optimization problems here, and then figure out which one has a larger maximum value.