

Fence it

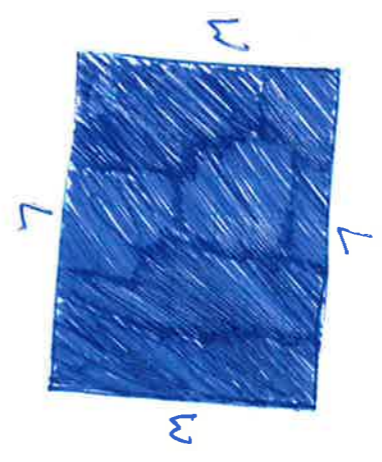
Target: Find the biggest area out of 3 different possible scenarios.

1. Using 40m of fencing, fence off the largest area; (like in the picture below).

Perimeter	width	length	area
40m	1m	19m	19m ²
40m	2m	18m	36m ²
40m	3m	17m	51m ²
40m	4m	16m	64m ²
40m	5m	15m	75m ²
40m	6m	14m	84m ²
40m	7m	13m	91m ²
40m	8m	12m	96m ²
40m	9m	11m	99m ²
40m	10m	10m	100m ²
40m	11m	9m	99m ²

I tried to make my calculations easy to follow, so used a table.

Biggest possible area is 100m² with all sides 10m



2. What if you put up 1 side against a wall? Fence off the biggest area, (using 40m of fencing, do not count the wall as a fence).

Perimeter	width	length	area
40m	1m	39m	39m ²
40m	2m	36m	72m ²
40m	3m	34m	102m ²
40m	4m	32m	128m ²
40m	5m	30m	150m ²
40m	6m	28m	168m ²
40m	7m	26m	182m ²
40m	8m	24m	192m ²
40m	9m	22m	198m ²
40m	10m	20m	200m ²
40m	11m	18m	198m ²

All calculations in the table.

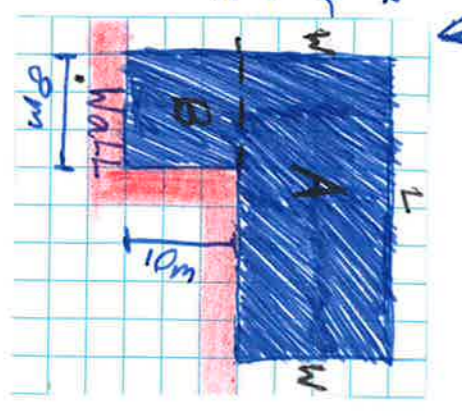
biggest area possible is with width of 10 and length of 20m.



3. What if the wall looked like this?

Perimeter	width	length	area	total area
30m	1m	28m	28m ²	108m ²
30m	2m	26m	52m ²	132m ²
30m	3m	24m	72m ²	152m ²
30m	4m	22m	88m ²	168m ²
30m	5m	20m	100m ²	180m ²
30m	6m	18m	108m ²	188m ²
30m	7m	16m	112m ²	192m ²
30m	8m	14m	112m ²	192m ²
30m	9m	12m	108m ²	188m ²
30m	10m	10m	100m ²	180m ²
30m	11m	8m	88m ²	168m ²
30m	12m	6m	72m ²	152m ²
30m	13m	4m	52m ²	132m ²
30m	14m	2m	28m ²	108m ²

Shape B (look diagram) will always have 8m² and use 10m of your perimeter. In the table, I used 30m to calculate the area of shape B, before calculating the total area.



Scenario 2 provides you with the largest plot of land possible (using 40m of fencing).