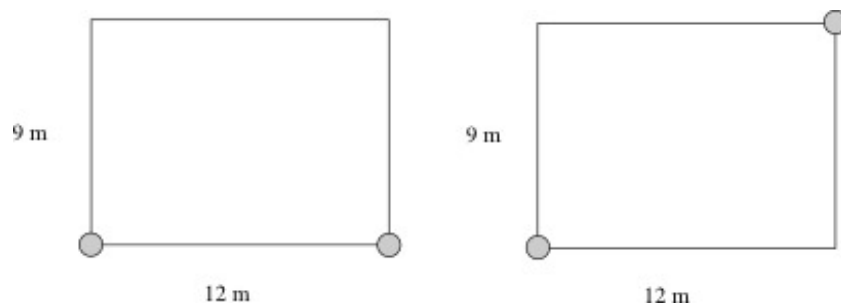


G-C, G-SRT Setting Up Sprinklers

Task

Selina has a 9 meter by 12 meter lawn that she wants to water. She has two sprinklers, each of which can water grass within an 8.4-meter radius. Selina wants to set up the two sprinklers so that they are on corners of the lawn. She would like for the sprinklers to water as much of the lawn as possible, because she will have to manually water the part of the lawn that is not covered by the sprinklers.

a. Selina considers two different strategies for placing the sprinklers. One strategy is to put the sprinklers at opposite ends of a 12-meter side of the lawn. The other is to put the sprinklers at opposite corners of the lawn. (See the figures below.) Which strategy appears to be best? Justify your answer.



b. If Selina chooses the better of these two strategies, what percentage of the lawn will she be able to water with the sprinklers?

c. If Selina is allowed to put sprinklers in the interior of her lawn, how many sprinklers does she need to water the entire lawn?

