

# A Fence for the Community Pasture

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The county council meeting was about to adjourn when, yet again, counsellor Smith requested the floor and said, "We are facing a serious problem with the use of our community pasture. The farmers wanted the cattle, horses and sheep in separate areas. It is therefore necessary that the existing pasture be cross-fenced to create three separate areas for the animals." Everyone seemed to agree with the suggestion.

"To avoid problems later on, it is best that the three subdivisions have the same area," said the reeve.

"That's probably a good idea," replied counsellor Smith. "Since the community pasture is a perfect square, we simply have to divide it into three rectangular pastures of equal area."

"That's not possible," remarked counsellor Jones, who is also a teacher. "The circular pond is located right at the northeast corner of the pasture. If we subdivide the community pasture into three rectangular pastures, there will be no access to the pond from two of these subdivided pastures." After further discussion of the problem, Jones suggested, "One fence should be built from the northeast corner of the pasture to the west side and the second fence should be built from the northeast corner to the south side of the community pasture. If we do it right, all three subdivisions would be of equal area and all three would have access to the pond." The county council voted unanimously in favor of this suggestion.

"How many metres of fence do we need to build?" asked counsellor Prat.

"Well," said the reeve, "I have not done any geometry for a long time. I am clueless when it comes to these kinds of problems." He then asked, "How long is the fence around the entire community pasture?"

"Twelve hundred metres," was the response from Jones.

"Why don't we simply buy 1,200 metres of fencing? That would likely be enough," said the reeve.

"It would be better if we calculate more accurately what we need," suggested Smith.

Now all eyes were suddenly focused on counsellor Jones, the teacher, to provide them with the answer. After a brief pause, counsellor Jones said, "This is not a difficult problem. I will order exactly what we need and no more." Everyone agreed and the meeting was adjourned.

Do you know how many metres of fencing counsellor Jones needs to order?

