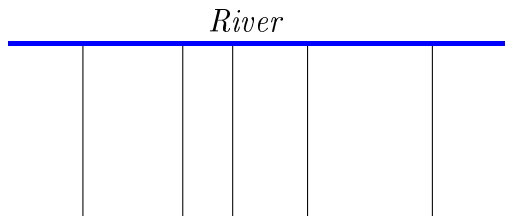


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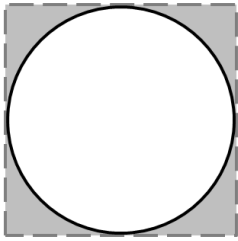
Homework 14
Section 4.5

1. (6) A farmer plans to construct 4 adjacent pens with one edge along a river, as shown below. If the farmer has 1800 yards of fencing, what is the maximum total area that he can enclose? *No fencing is needed along the river.*



2. (7) A small country inn has 30 rooms. Through market research it is known that at a per night room rate of \$240 they will rent 10 rooms. For each \$4 decrease in room rate, they will be able to book one more room. What price per night should they charge in order to maximize their revenue?

3. (6) A company plans to construct a right circular cylindrical can, with an open top, and a volume of 125 in^3 . The bottom of the can will be constructed from a material which costs 6 cents per in^2 , while the side will cost 3 cents per in^2 . The company is only able to purchase the materials in rectangular sheets, so there will be some waste when cutting the circular bottom out of a square sheet. What is the minimum cost of the material needed to construct the can?



material for bottom