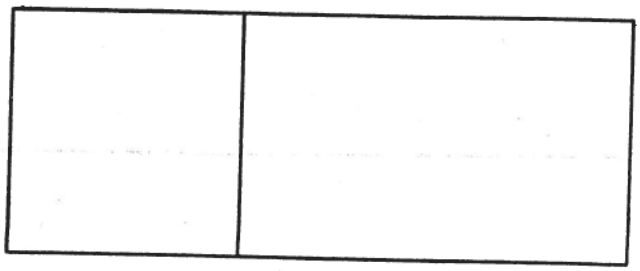
MCR 3UI

Max/Min Problems #2

1. Two numbers have a difference of 16. Find the numbers if the result of adding their sum and their product is a minimum.

2. A lifeguard at a beach marks off a rectangular swimming area along the shore, with 200m of rope. What is the greatest area of water he can enclose?

3. A rectangular area is enclosed by a fence and divided by another section of fence parallel to two of its sides, as shown. If the 600m of fence used, encloses a maximum area, what are the dimensions of the enclosure?



4. A theatre seats 2000 people and charges $10.00 for a ticket. At this price all the tickets can be sold. A survey indicates that if the ticket price is increased, the number sold will decrease by 100 for every dollar of increase. What ticket price would result in the greatest revenue?

5. What is the maximum area of a triangle having 15 cm as the sum of its base and height?

6. Find the number which exceeds its square by the greatest possible amount.

7. Find the maximum possible area of a rectangle with a given perimeter.

8. The sum of a number and three times another number is 18. Find the numbers if their product is a maximum.

SOLUTIONS

1. 7, -9
2. 5000 m^2
3. 100m x 150 m
4. $15.00
5. 28.125 cm^2
6. 8. $\frac{1}{2}$
7. $p^2/16$ $units^2$
8. 9, 3