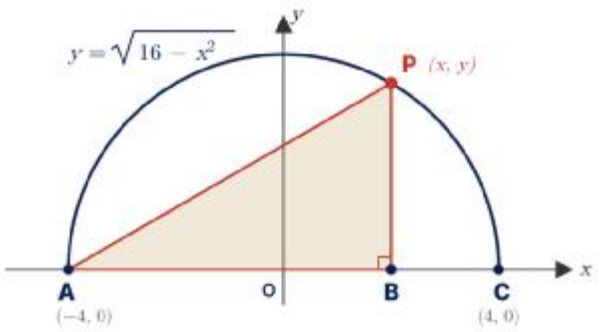
Optimization Starter Pack

1. What is the maximum area of a rectangle if its perimeter is fixed at 24m?

2. A cylindrical container without a top is made to contain $27\pi\ ft^3$ of water. Determine the dimensions of the container that minimizes the area of metal used?

3. Find the co-ordinate of the point P which lies on the curve $y = \sqrt{16 - x^2}$ for which the area of the right triangle ABP is the largest?



4. Determine the area of the largest rectangle that can be inscribed in a circle with the radius of 4m?

5. The price of pizza is p, and the number of pizzas sold is q the pizza shop is governed by this relationship $3p^2 + q^2 = 72$. What price should the pizzas be sold at in order to maximize revenue?

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