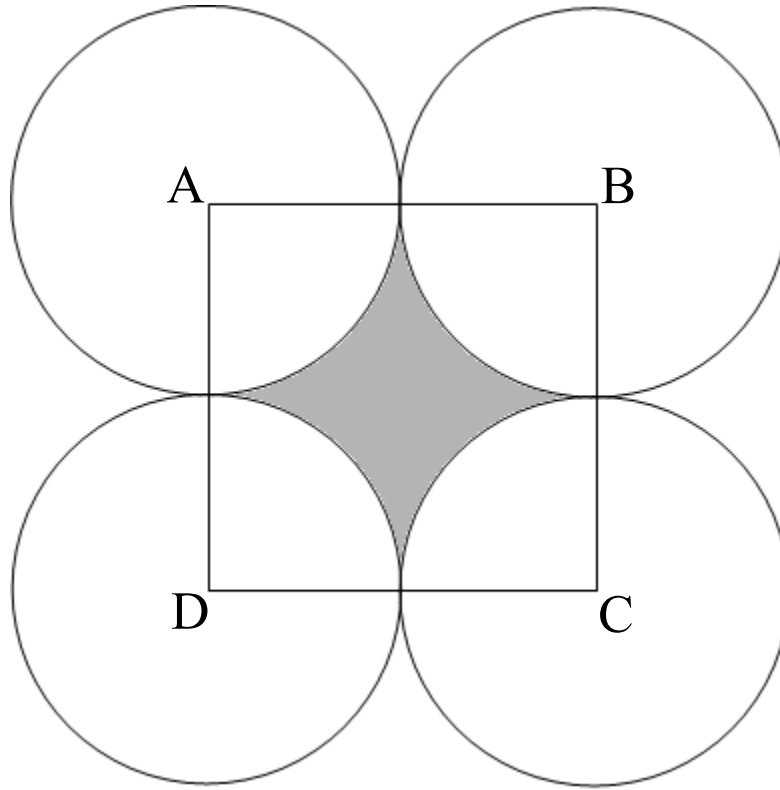


## The Area Problem



Square ABCD has the centers of four circles as its vertices at points A, B, C, and D. If each circle has a radius of 5 cm, find the area of the shaded region.

[Source: *Mathematics Teaching in the Middle School*, volume 11, number 4, November 2005]

Each side of the square is 10, so the square's area would be  $100 \text{ cm}^2$ .

One Circle would have an area of  $25\pi \text{ cm}^2$ , and the four quarter-circles in the square equal one circle.

Therefore, the area of the shaded region is  $(100 - 25\pi) \text{ cm}^2$ .

(That is approximately  $21.5 \text{ cm}^2$ )