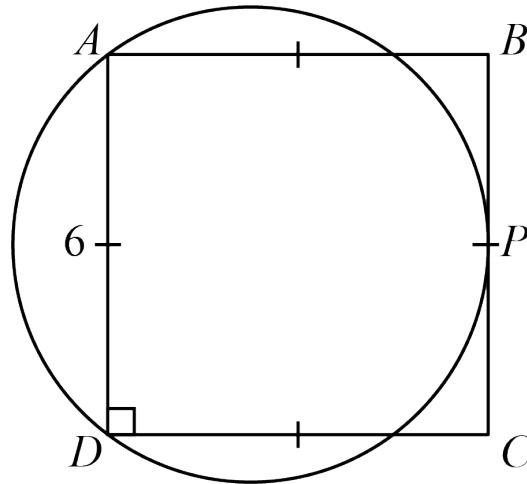# Problem of the Week
Problem E
Shape Building

Sina drew square $ABCD$ with side length 6 cm on a piece of paper and passed the paper to Theo. Theo drew a circle on top of the square so that the circle passes through A and D, and the circle is tangent to side BC at point P.

Determine the radius of the circle.

NOTE: You may find the following known result about circles useful:

If a line is tangent to a circle, then the perpendicular to that line at the point of tangency passes through the centre of the circle.