

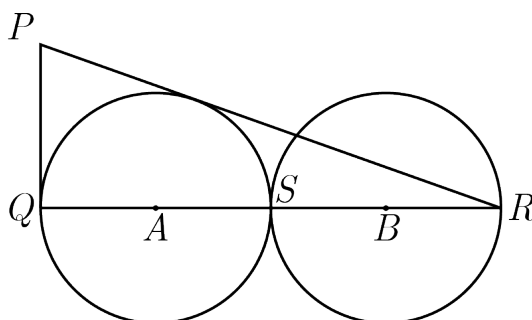


Problem of the Week

Problem E

A Triangle and Two Circles

Two circles with centres A and B , each with a radius of 3, are tangent to each other at S . A straight line is drawn through A , S and B , meeting the circle with centre A at Q , $Q \neq S$, and the circle with centre B at R , $R \neq S$. Point P is then drawn so that PQ and PR are each tangent to the circle with centre A .



Determine the length of PQ .

Note: For this problem, you may want to use the following known results about circles:

1. If a line is tangent to a circle, then the line is perpendicular to the radius drawn to the point of tangency.
2. A line drawn from the centre of a circle perpendicular to a tangent line meets the tangent line at the point of tangency.

