

Week of October 24, 2016

Suppose X, Y, Z are three different circles of equal radius which are mutually tangent. Let circle A be the circle tangent to $X, Y,$ and Z inside the gap between them, and let circle B be the circle tangent to $X, Y,$ and Z that surrounds them. Find the ratio of the radius of B to the radius of A in the form $a + b\sqrt{c}$ where a, b, c are integers.

(ASCM Problem Solving Competition Fall 2016)