

1. First, we can create a right triangle. Our hypotenuse will be side b , and the other bases will be $2a-b$ and $2\sqrt{ab} - a$. The radius of the small circle is named a and the radius of the larger circle is named b . When we plug these values into the Pythagorean Theorem ($a^2 + b^2 = c^2$) we would have the following: $(2\sqrt{ab} - a)^2 + (2a - b)^2 = (b)^2$. By foiling $(2\sqrt{ab} - a)^2$ we get $4ab - 4a\sqrt{ab} + a^2$ and by foiling $(2a - b)^2$ we get $4a^2 - 4ab + b^2$. So, our new equation would read $4ab - 4a\sqrt{ab} + a^2 + 4a^2 - 4ab + b^2 = b^2$. We then combine like terms to arrive at $5a^2 - 4a\sqrt{ab} + b^2 = b^2$. When we plug in 16 for a and 25 for b , the equation equals 0. Since, this is a ratio, if $a=32$ then $b=50$ in order to keep the same ratio.