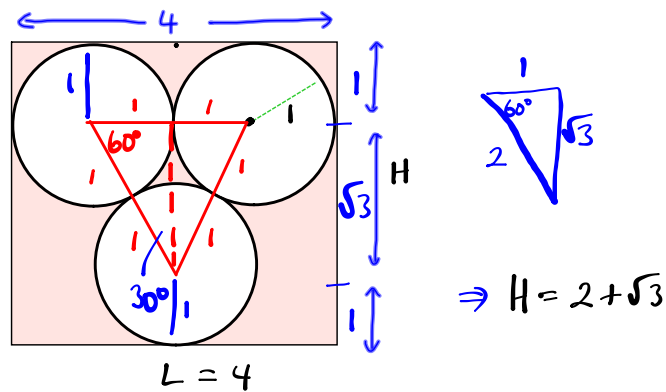
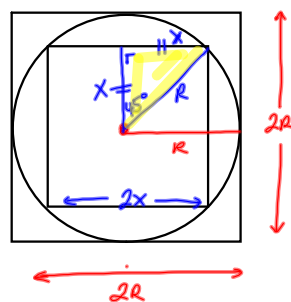


What is the area of the rectangle that contains the circles of radius 1?  
(as in diagram)



$$A = LH = 4(2 + \sqrt{3}) = 8 + 4\sqrt{3} \approx 14.9$$

What is the ratio of Area Large Square to Small Square?



$$\text{Area Large Square} = (2R)^2 = 4R^2$$

$$\text{Area Small Square} = (2x)^2 = 4x^2$$

$$x^2 + x^2 = R^2 \quad [\text{Pythagoras}]$$

$$\Rightarrow 2x^2 = R^2$$

$$x^2 = \frac{R^2}{2}$$

$$\Rightarrow \text{Area Small} = 4\left(\frac{R^2}{2}\right) = 2R^2$$

$$\Rightarrow \text{Area Large} : \text{Area Small}$$

$$4R^2 : 2R^2$$

$$2 : 1$$