| **Circles and Squares** | Rubric | |
|---|---|---|
| | Points | Section points |
| Gives correct answer: The ratio of the areas of the two squares is 1:2 | 1 | |
| Shows correct work such as:<br>Draws construction lines from the center of the circle to the vertices of the small square.<br>If the large square has side of length x, then, using the Pythagorean Theorem gives the length of the sides of the small square are $\sqrt{2}x/2$.<br>The area of the large square is $x^2$.<br>The area of the small square is $x^2/2$<br>Accept alternative methods. | 4 | |
| Gives correct answer: The ratio of the two areas is 1:2 | 1 | |
| If a second circle is inscribed in the smaller square, using the Pythagorean Theorem gives the radius of the small square is $\sqrt{2}x/4$<br>The area of the large circle is $\pi(x/2)^2 = \pi x^2/4$<br>The area of the small circle is $\pi(\sqrt{2}x/4)^2 = \pi 2x^2/16 = \pi x^2/8$<br>Accept alternative methods. | 4 | 10 |
| **Total Points** | | **10** |