

**Related Practice – Answer Key**  
**Math in Action Video: Urban Planning**  
**Urban Planner: Alex Chen**

**Directions:** Complete the following activities to enhance your viewing of the Math in Action video and reinforce your understanding of math concepts.

**Math in Action: Area of a Circle**

Find the area of the land circle described in the video. The radius is  $\frac{1}{4}$  mile.

$$A = \pi r^2$$

**Answer:**

$$A = \pi(0.25)^2$$

$$A \approx 0.196 \text{ square miles}$$

or using 3.14 as the value for  $\pi$ ,

$$A = 0.19625 \text{ or approximately } 0.2 \text{ square miles}$$

**Math in Action: Density Function**

If there are 3 schools in the land circle with a  $\frac{1}{4}$  mile radius, what is the ratio of schools to land?

**Answer:**

$$\begin{aligned} \text{Density} &= \frac{3 \text{ schools}}{0.2 \text{ miles}^2} \\ &= 15 \text{ schools per square mile} \end{aligned}$$