

# Unit 8 Lesson 3: Rational and Irrational Numbers

## 1 Algebra Talk: Positive Solutions (Warm up)

### Student Task Statement

Find a positive solution to each equation:

$$x^2 = 36$$

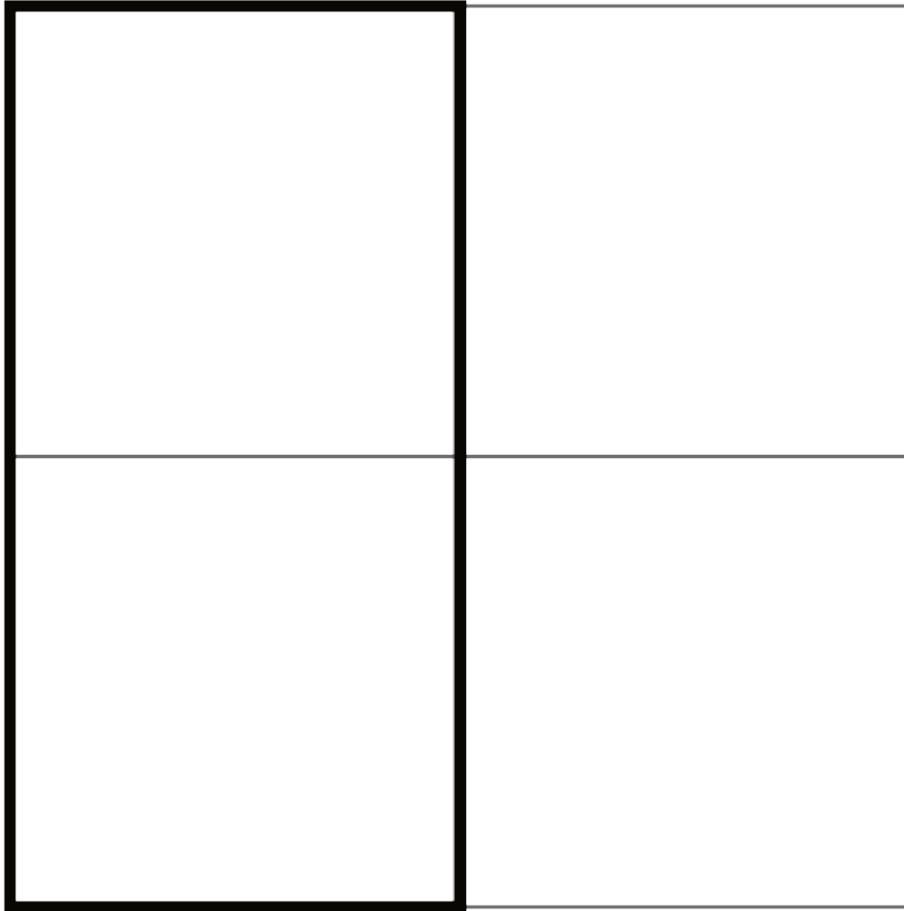
$$x^2 = \frac{9}{4}$$

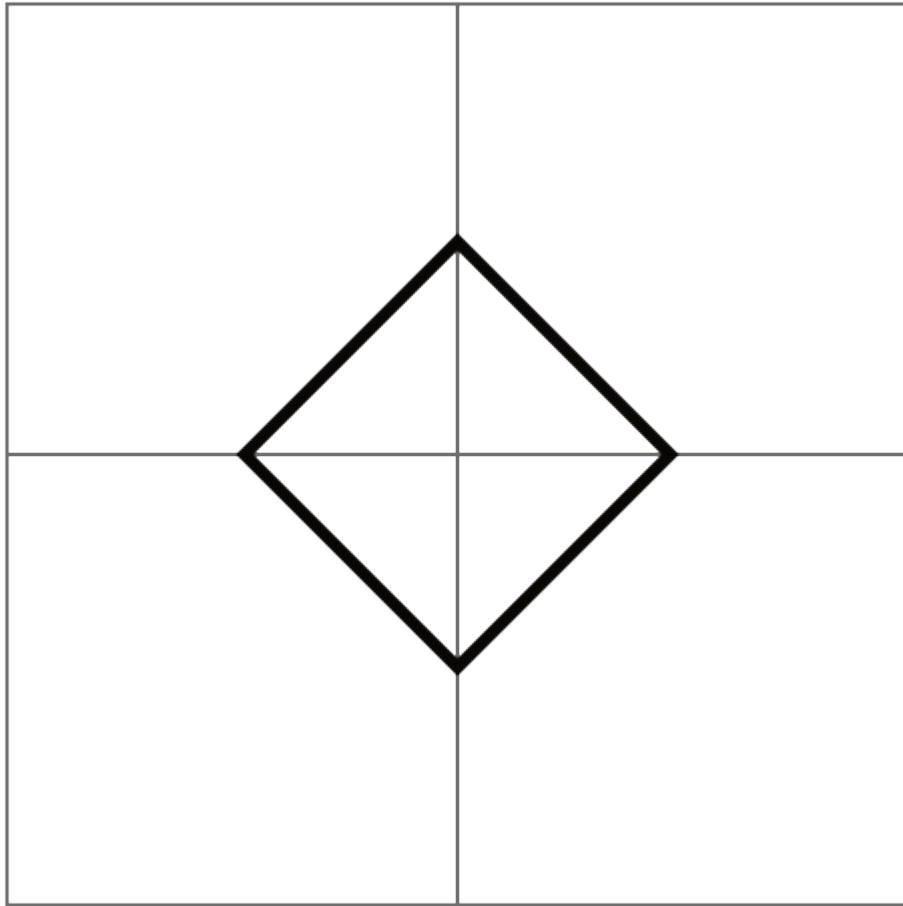
$$x^2 = \frac{1}{4}$$

$$x^2 = \frac{49}{25}$$

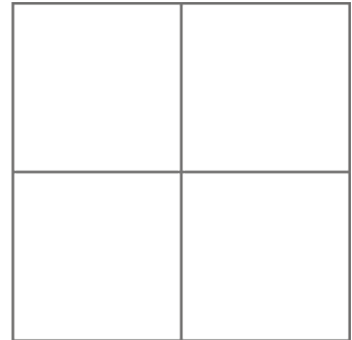
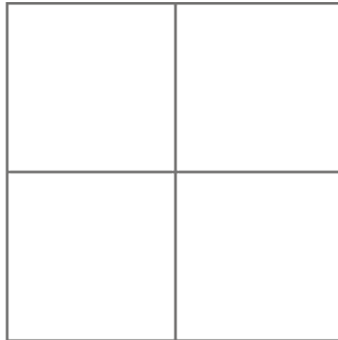
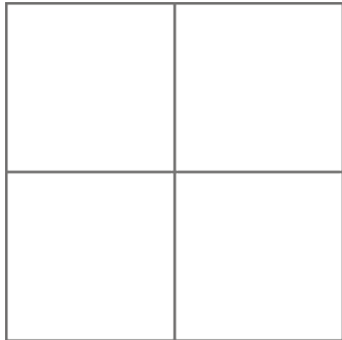
## 2 Three Squares

Images for Launch





**Student Task Statement**



1. Draw 3 squares of different sizes with vertices aligned to the vertices of the grid.
2. For each square:
  - a. Label the area.
  - b. Label the side length.
  - c. Write an equation that shows the relationship between the side length and the area.

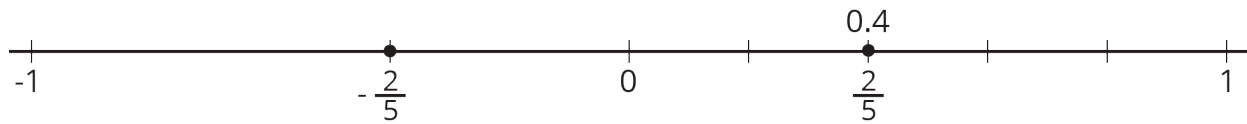
### 3 Looking for a Solution

#### Student Task Statement

Are any of these numbers a solution to the equation  $x^2 = 2$ ? Explain your reasoning.

- 1
- $\frac{1}{2}$
- $\frac{3}{2}$
- $\frac{7}{5}$

#### Activity Synthesis



## 4 Looking for $\sqrt{2}$

### Student Task Statement

A **rational number** is a fraction or its opposite (or any number equivalent to a fraction or its opposite).

1. Find some more rational numbers that are close to  $\sqrt{2}$ .
2. Can you find a rational number that is exactly  $\sqrt{2}$ ?

## Activity Synthesis

