## Unit 8 Lesson 4: Square Roots on the Number line

### 1 Notice and Wonder: Diagonals (Warm up)

#### Student Task Statement

What do you notice? What do you wonder?



### 2 Squaring Lines

#### Student Task Statement



1. Estimate the length of the line segment to the nearest tenth of a unit (each grid square is 1 square unit).
2. Find the exact length of the segment.

### 3 Square Root of 3

#### Student Task Statement

Diego said that he thinks that $\sqrt{3}≈2.5$.



1. Use the square to explain why 2.5 is not a very good approximation for $\sqrt{3}$. Find a point on the number line that is closer to $\sqrt{3}$. Draw a new square on the axes and use it to explain how you know the point you plotted is a good approximation for $\sqrt{3}$.
2. Use the fact that $\sqrt{3}$ is a solution to the equation $x^{2}=3$ to find a decimal approximation of $\sqrt{3}$ whose square is between 2.9 and 3.1.

### 4 Solutions on a Number Line

#### Student Task Statement

The numbers $x$, $y$, and $z$ are positive, and $x^{2}=3$, $y^{2}=16$, and $z^{2}=30$.



1. Plot $x$, $y$, and $z$ on the number line. Be prepared to share your reasoning with the class.
2. Plot $-\sqrt{2}$ on the number line.



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