## Unit 3 Lesson 6: Squares and Square Roots

### 1 Math Talk: Four Squares (Warm up)

#### Student Task Statement

Find the solutions of each equation mentally.

$x^{2}=4$

$x^{2}=2$

$x^{2}=0$

$x^{2}=-1$



### 2 Finding Square Roots

#### Student Task Statement

Clare was adding $\sqrt{4}$ and $\sqrt{9}$, and at first she wrote $\sqrt{4}+\sqrt{9}=2+3$. But then she remembered that 2 and -2 both square to make 4, and that 3 and -3 both square to make 9. She wrote down all the possible combinations:

    2 + 3 = 5
    2 + (-3) = -1
    (-2) + 3 = 1
    (-2) + (-3) = -5

Then she wondered, “Which of these are the same as $\sqrt{4}+\sqrt{9}$? All of them? Or only some? Or just one?”

How would you answer Clare’s question? Give reasons that support your answer.

#### Activity Synthesis

$b=\sqrt{a}$



$d^{2}=c$



### 3 One Solution or Two?

#### Student Task Statement

1. The graph of $b=\sqrt{a}$ is shown.
* 
	1. Complete the table with the exact values and label the corresponding points on the graph with the exact values.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| * + $a$
 | * + 1
 | * + 4
 | * + 9
 | * + 12
 | * + 16
 | * + 20
 |
| * + $\sqrt{a}$
 |  |  |  |  |  |  |

* 1. Label the point on the graph that shows the solution to $\sqrt{a}=4$.
	2. Label the point on the graph that shows the solution to $\sqrt{a}=5$.
	3. Label the point on the graph that shows the solution to $\sqrt{a}=\sqrt{5}$.
1. The graph of $t=s^{2}$ is shown.
	1. Label the point(s) on the graph that show(s) the solution(s) to $s^{2}=25$.
	2. Label the point(s) on the graph that show(s) the solution(s) to $\sqrt{t}=5$.
	3. Label the point(s) on the graph that show(s) the solution(s) to $s^{2}=5$.
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