

U3D2_T Graphing the Reciprocal and Root Functions

Thursday, March 14, 2019 4:54 PM

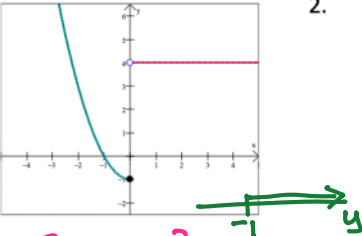
UNIT TEST: TUESDAY, APRIL 2



U3D2_T
Warmup ...

MCR 3UI **FUNCTIONS AND RELATIONS**

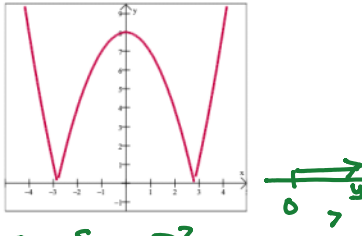
WARM UP State the domain and range for the following functions.

1. 

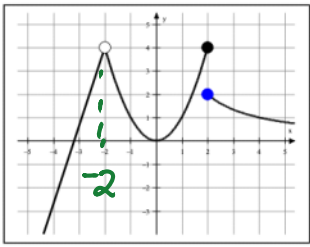
$D: \{x \in \mathbb{R}\}$
 $R: \{y \geq -1\}$

U3D2

Relations

2. 

$D: \{x \in \mathbb{R}\}$
 $R: \{y \geq 0\}$

3. 

$D: \{x \neq -2\}$
 $R: \{y \leq 4\}$

4. $3x - 5y = 12$

$D: \{x \in \mathbb{R}\}$
 $R: \{y \in \mathbb{R}\}$

5. $y = -3x^2 + 5$ *V(0, 5) in*

$D: \{x \in \mathbb{R}\}$ *← s y*
 $R: \{y \leq 5\}$

6. $y = \sqrt{x}$ *this symbol is the 'principle square root' (positive root)*

$D: \{x \geq 0\}$
 $R: \{y \geq 0\}$

7. $y = \sqrt{x-3}$

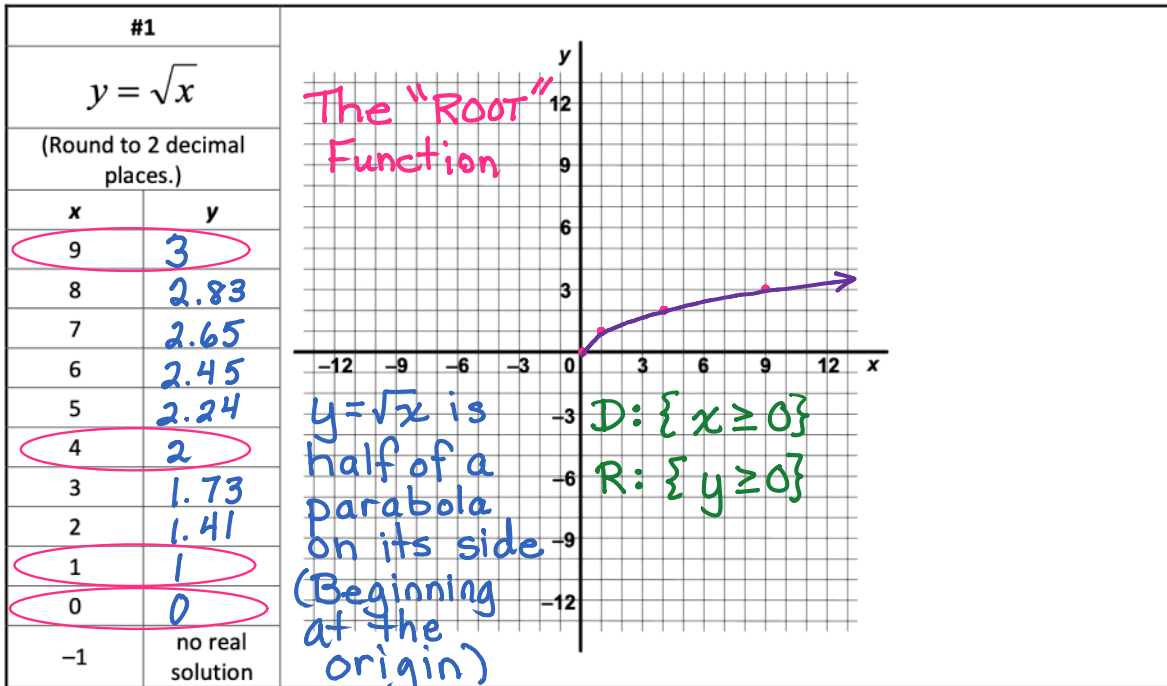
$D: \{x \geq 3\}$
 $R: \{y \geq 0\}$

8. $y = \sqrt{x+1}$

$D: \{x \geq -1\}$
 $R: \{y \geq 0\}$



U3D2_T
Basic Gra...



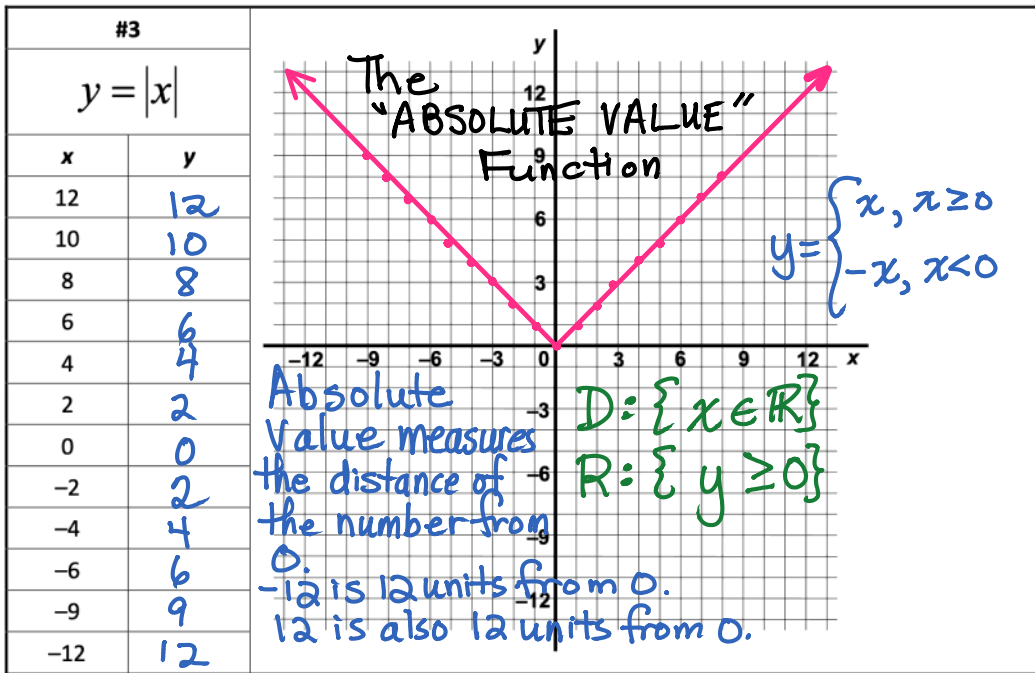
| #2 | |
|--------------------|---|
| $y = \frac{1}{x}$ | |
| Use fraction form. | |
| x | y |
| 1 | 1 |
| 2 | $\frac{1}{2}$ |
| 4 | $\frac{1}{4}$ |
| 8 | $\frac{1}{8}$ |
| $\frac{1}{2}$ | $\frac{1}{\frac{1}{2}} = 1 \div \frac{1}{2} = 1 \times \frac{2}{1} = 2$ |
| $\frac{1}{4}$ | 4 |
| $-\frac{1}{4}$ | -4 |
| $-\frac{1}{2}$ | -2 |
| -1 | -1 |
| -2 | $-\frac{1}{2}$ |
| -4 | $-\frac{1}{4}$ |

The "Reciprocal" Function

* draw in the asymptotes with dotted lines
* label the asymptotes.

D: $\{x \neq 0\}$

R: $\{y \neq 0\}$



| #4 | |
|------------------------------|------|
| $x = y^2$ | |
| (Round to 2 decimal places.) | |
| x | y |
| 12.25 | 3.5 |
| 9 | 3 |
| 4 | 2 |
| 1 | 1 |
| 0 | 0 |
| 1 | -1 |
| 4 | -2 |
| 9 | -3 |
| 12.25 | -3.5 |

$x = y^2$ is NOT a function. It is a full parabola on its side.

The top half is $y = \sqrt{x}$

The bottom half is $y = -\sqrt{x}$

D: $\{x \geq 0\}$
R: $\{y \in \mathbb{R}\}$