SECTION 10.1

SWBAT:

Functions Involving Square Roots

Evaluate and graph a function using square roots.

Vertical Translation & Reflection

The graph of $y = a\sqrt{(x - b)} + c$ is a radical function

- If a is positive
 •the radical "rainbow" opens up
- If a is negative
 •the radical "rainbow" opens down
- If + **b**
 - The radical moves left "b" units
- If b
 - The radical moves right "b" units

Vertical Translation & Reflection

The graph of $y = a\sqrt{(x - b)} + c$ is a radical function

- If + c
 - The radical moves up "c" units
- If -c

• The radical moves down "c" units



$$y = \frac{1}{2}\sqrt{x} + 2$$



Transformations. · Vertical Shrink of 2

· Up 2 units

$$y = -\frac{1}{4}\sqrt{x} - 1$$

domain: XZO range: y≤-1 $\begin{array}{c|c} X & Y \\ \hline 0 & -1 \\ 1 & -1.25 \\ \hline 4 & -1.5 \\ \hline 9 & -1.75 \end{array}$

Transformations

· reflects over X-axis

· down I unit

· Vertical Shrink of 4

X + 1 ≥ 0 - 1 - 1

x = - |

$$y = -2\sqrt{x+1}$$

domain:
$$X \ge -$$

ange:
$$y \leq 0$$

 $-1 \quad 0 \quad x+1=0$
 $0 \quad -2 \quad x+1=1$
 $3 \quad -4 \quad x+1=4$
 $3 \quad -6 \quad x+1=4$
 $5 \quad -6 \quad x+1=6$

- reflected over X-axis
- vertical stretch of 2
- -left / unit

$$y = 3\sqrt{x-2}$$

domain:
$$X = 2$$

range: $Y = 0$
 $X = Y$
 $2 = 0$
 $X = 2 = 0$

- Verhcal Smetch of 3 - right 2 units

Did We Reach Our Objective?

 SWBAT understand how to graph radical equations.

Homework



Section 10.1
#'s Graph 14, ½, 19, 22, 24, 28, 34
Determine the domain and range, graph.
Write the transformations of each function compared to: y = √x