Square Root Functions and Inequalities

Square Root Functions: A function that contains the square root of a variable expression

Remember: The radicand of a square root cannot be negative!

Domain of a function: complete set of x values that make the function "work"

Range of a function: complete set of possible resulting values of the dependent variable (i.e. what do we get for y after we substitute all possible x values)

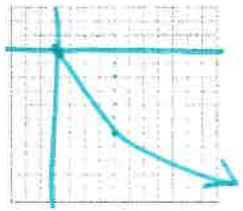
Graph $y = \sqrt{3x - 2}$. State it's domain and range.

- Since the radicand cannot be negative, $3x - 2 \geq 0$ or $x \geq$ $\frac{2}{3}$.
- The x-intercept is $\frac{2}{3}$.
- Domain: $x \geq \frac{2}{3}$ Range: $y \geq 0$

x	y
2/3	0
1	1
2	2
3	$\sqrt{7}$

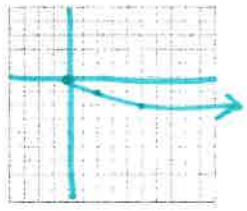
Graph each function. State the domain and range of the function.

$y = -3\sqrt{x}$



D: $x \geq 0$ R: $y \leq 0$

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

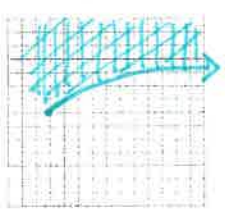


D: $x \geq 0$ R: $y \leq 0$

Square Root Inequalities:

$y < \sqrt{3x - 4}$

$y \geq \sqrt{x + 1} - 4$



D:

R:

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