lulumath

Bonus Domain and Range - A Square Root Function

Video Notes

Video Link

Bonus Domain and Range - A Square Root Function

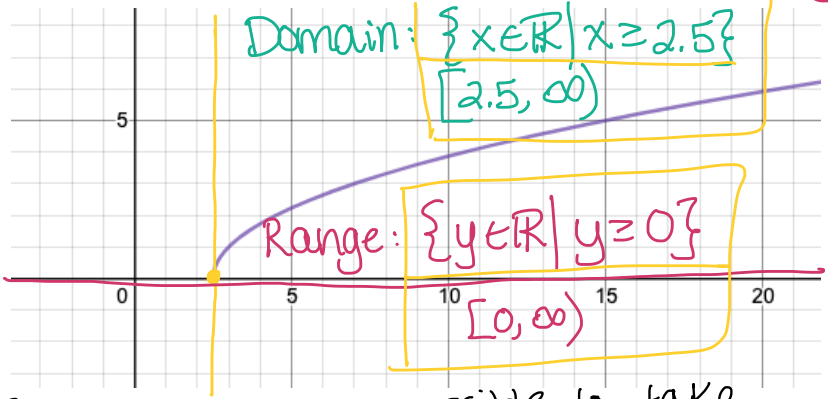
Background Knowledge:

- Domain and Range

Definitions:

Domain	Range
The set of all inputs (x-values/ independent values) that satisfy a relation.	The set of all outputs (y-values/ dependent values) that satisfy the relation and the domain defined by it.

Determine the domain and range of the function $y = \sqrt{2x - 5}$.



Because it is not possible to take the square root of a negative using real numbers, $2x - 5 \geq 0$ ← This tells us the domain!

$2x - 5 \geq 0$

$2x \geq 5$

$x \geq \frac{5}{2}$ or 2.5

Ex: $x = 7$

$y = \sqrt{2x - 5}$

$y = \sqrt{2(7) - 5}$

$y = \sqrt{14 - 5}$

$y = \sqrt{9}$

$y = 3$ → output works!

Ex: $x = 10$

$y = \sqrt{2(10) - 5}$

$y = \sqrt{20 - 5}$

$y = \sqrt{15}$ → output works!

Ex: $x = 2$

$y = \sqrt{2(2) - 5}$

$y = \sqrt{4 - 5}$

$y = \sqrt{-1}$ → output DOES NOT WORK!

Tip Reminder: When finding domain, sometimes it's easier to ask, "what doesn't work for x?"