

Square Root Equations

Goal:

- to solve square root equations

Homework: p.39 #4,10

What is special about square root equations?

- restricted domain

- false solutions exist! sq. root \neq negative

$$3\sqrt{2x-1} + 4 = 5$$

-4 -4

$$\frac{3\sqrt{2x-1}}{3} = \frac{1}{3}$$

$$\sqrt{2x-1} = \frac{1}{3}$$

$$2x-1 = \frac{1}{9}$$

+1 +1

$$\frac{2x}{2} = \frac{10}{9}$$

/2

$$x = \frac{10}{18}$$

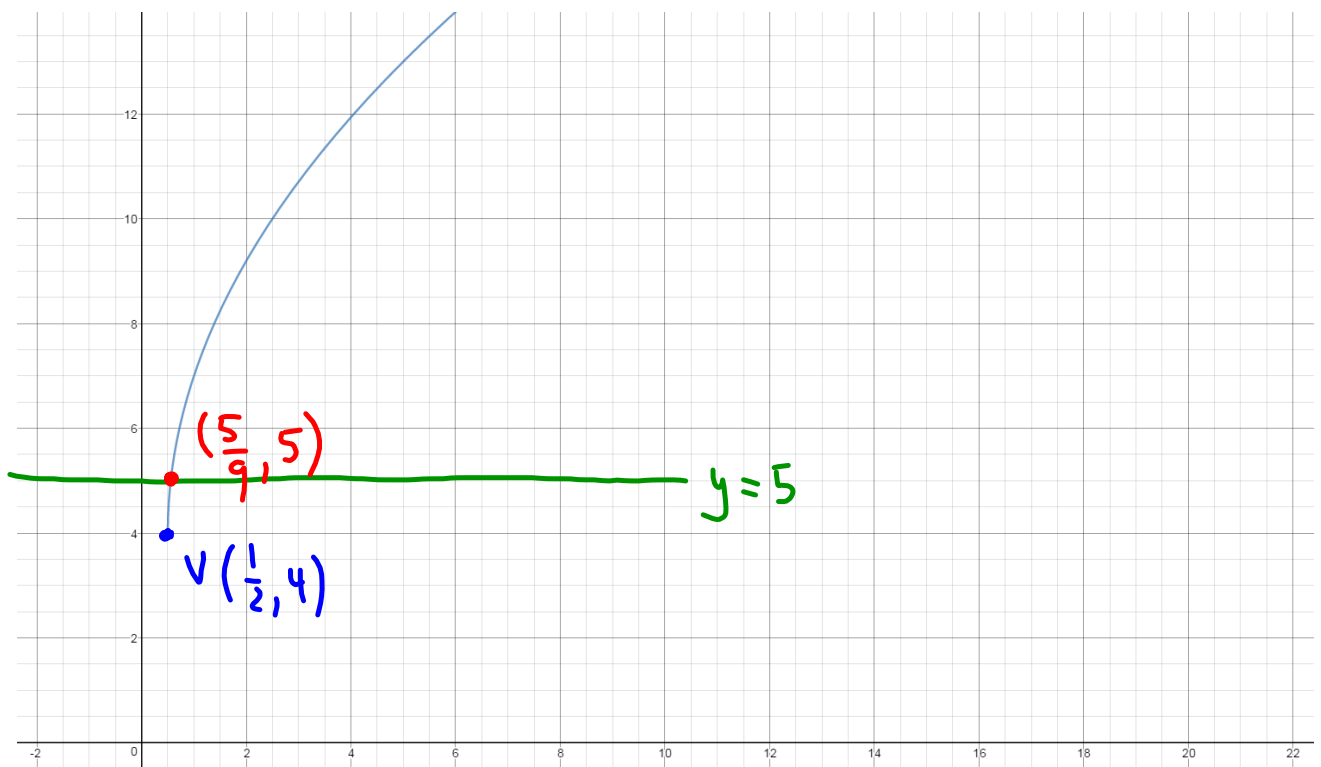
$$x = \frac{5}{9} \quad \checkmark$$

Domain: $2x-1 \geq 0$

$$2x \geq 1$$

$$x \geq \frac{1}{2}$$

Graphical solution



$$-3\sqrt{2x-1} + 4 = 5$$

-4 -4

$$\frac{-3\sqrt{2x-1}}{-3} = \frac{1}{-3}$$

$$\sqrt{2x-1} = -\frac{1}{3}$$

~~$$2x-1 = \frac{1}{9}$$~~

~~$$x = \frac{5}{9}$$~~

$$\text{dom } f: x \geq \frac{1}{2}$$

No solution.
The square root will never equal a negative.

Graphical solution

