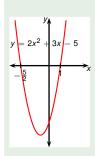
Precalculus Quadratic inequality part 1

Todor Miley

2019

Example



Solve the inequality.

$$\begin{array}{ccc} 2x^2+3x-5 & \geq & 0 \\ (2x+5)(x-1) & \geq & 0 \\ x \in \left(-\infty, -\frac{5}{2}\right] \cup [1, \infty) \end{array}$$

Left hand side vanishes when $x = -\frac{5}{2}$ and when x = 1. The two roots split the real line into three intervals:

$$\left(-\infty,-\frac{5}{2}\right),\left(-\frac{5}{2},1\right),\left(1,\infty\right).$$



Interval	Factor signs	Final sign	Sample pt	Value at sample pt
$\left(-\infty, -\frac{5}{2}\right)$	(-)(-)	+	-100	f(-100) > 0
$\left(-\frac{5}{2}, 1\right)$	(+)(-)	_	0	f(0) = -5 < 0
$(1,\infty)$	(+)(+)	+	100	f(100) > 0