

C11 - 7.5 - Quadratic Absolute Value Equations Notes

Solve algebraically.

$$|x^2 - 4| = x + 2$$

"+" case:

$$\begin{aligned}+(x^2 - 4) &= x + 2 \\x^2 - 4 &= x + 2 \\x^2 - x - 6 &= 0 \\(x - 3)(x + 2) &= 0 \\x &= 3, -2\end{aligned}$$

"-" case:

$$\begin{aligned}-(x^2 - 4) &= x + 2 \\-x^2 + 4 &= x + 2 \\0 &= x^2 + x - 2 \\0 &= (x + 2)(x - 1) \\x &= -2, 1\end{aligned}$$

Check Answers!

$$x = 3, -2$$

$$x = -2, 1$$

Solve Graphically

$$y = |x^2 - 4|$$

