- Assuming $x \leq 0$, and isolating $\sqrt{x+4}$ in the LHS, we get:

$$\sqrt{x+4} = 2 * x$$

- Squaring both sides, we get:

$$x + 4 = 4 + x^2 + 4x$$

- Passing everything to the RHS, we get:

$$0 = x^2 + 3x$$

- Taking x as a common factor, we get:

$$0 = x(x+3)$$

- Hence, either $\boxed{x = 0 \text{ or } x = -3}$.

- we already know that $x = 0$ is coherent with the original equation. Let's just plug $x = -3$ in the original eq:

If $x = -3$, $|-3| + \sqrt{-3+4} - 2 = 0 \Rightarrow 3 + \sqrt{1} - 2 = 0 \Rightarrow$

$\Rightarrow 4 - 2 = 0 \Rightarrow \boxed{2 = 0}$ → wrong.

- Hence, $x = -3$ is not a solution for our equation.

Final answer: $x = 0$ is the only solution to the proposed equation.