

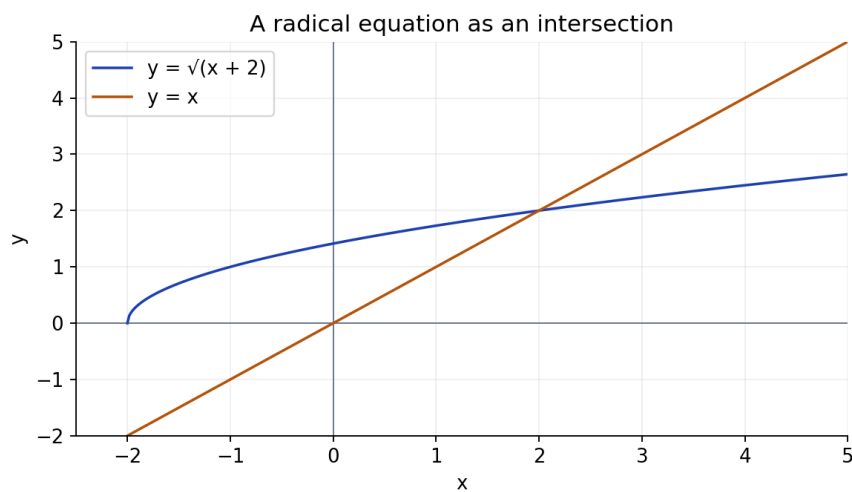
Problems | Name: _____

3.1 Radical Equations and Extraneous Solutions

3.1.1. Solve $\sqrt{x+1} = 3$.

3.1.2. Solve $\sqrt{x} = x - 2$.

3.1.3. Use the graphs of $y = \sqrt{x+2}$ and $y = x$ to solve $\sqrt{x+2} = x$.



A valid solution must satisfy the original radical equation.

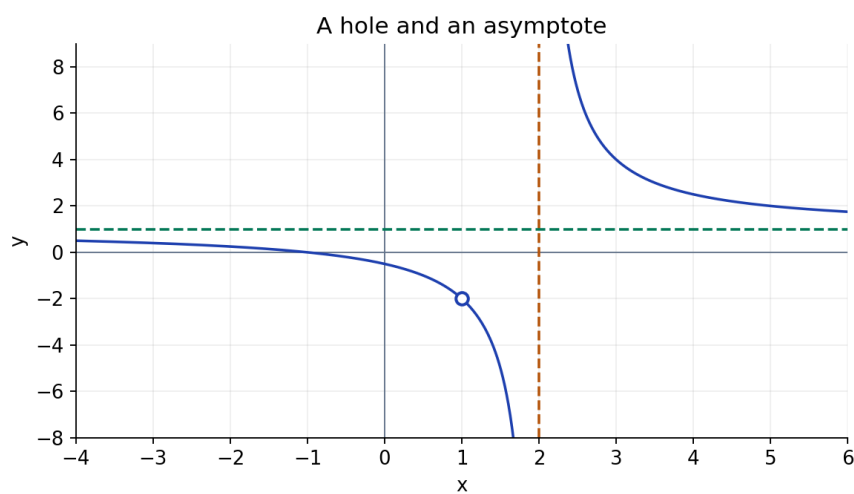
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3.2 Asymptotes and Holes

3.2.1. Simplify $(x^2 - 4)/(x - 2)$ and state the hole.

3.2.2. Find the excluded input and vertical asymptote of $1/(x + 3)$.

3.2.3. For the graphed function $f(x) = (x^2 - 1)/((x - 1)(x - 2))$, state the hole and vertical asymptote.



Original denominator exclusions remain after cancellation.

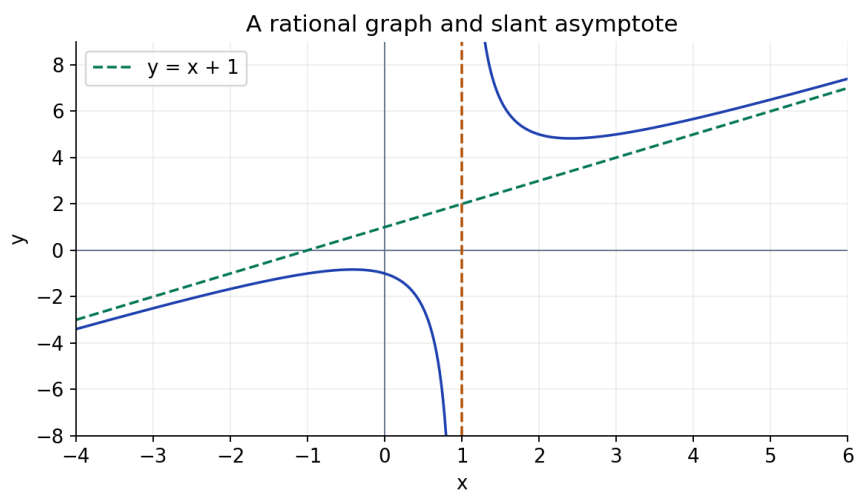
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3.3 End Behavior of Rational Functions

3.3.1. Find the horizontal asymptote of $(2x + 1)/(x^2 + 4)$.

3.3.2. Find the horizontal asymptote of $(5x^3 - 1)/(2x^3 + x)$.

3.3.3. Use the graph of $y = (x^2 + 1)/(x - 1)$ to identify its slant and vertical asymptotes.



Compare the curve with the dashed line away from the vertical asymptote.
