Graphing Rational Functions - Example 3

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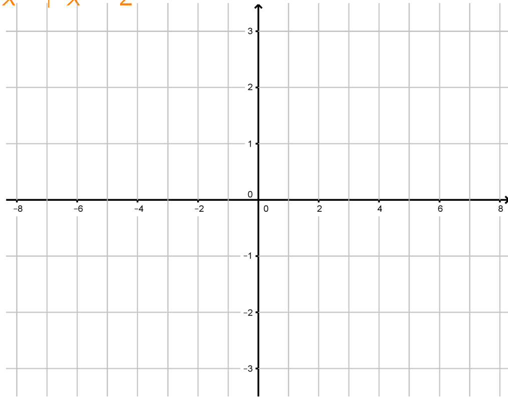

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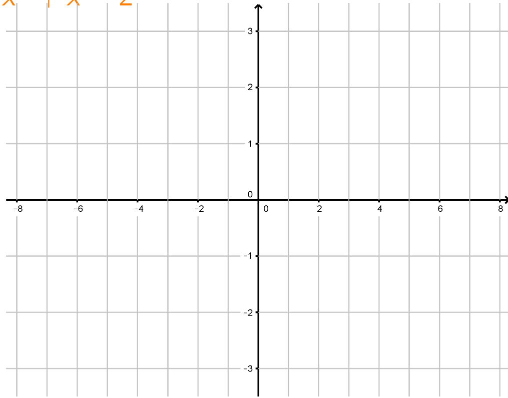

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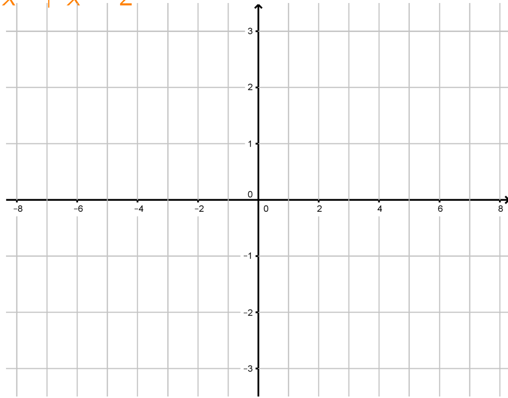

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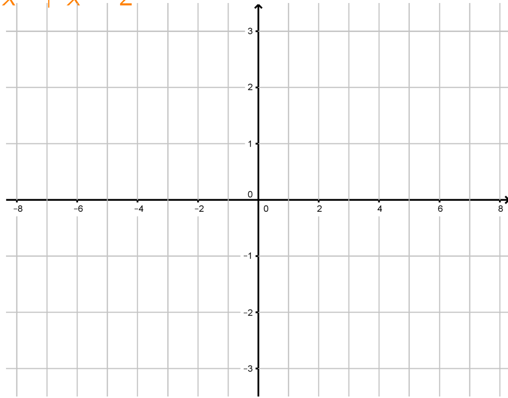

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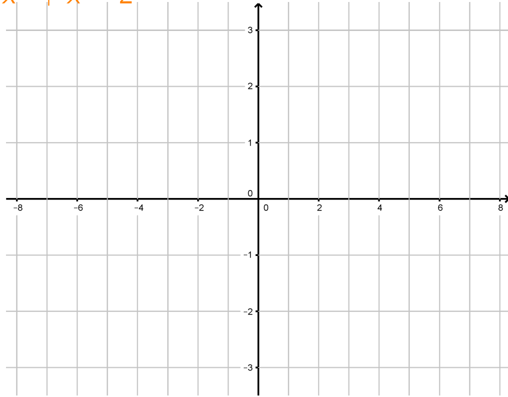

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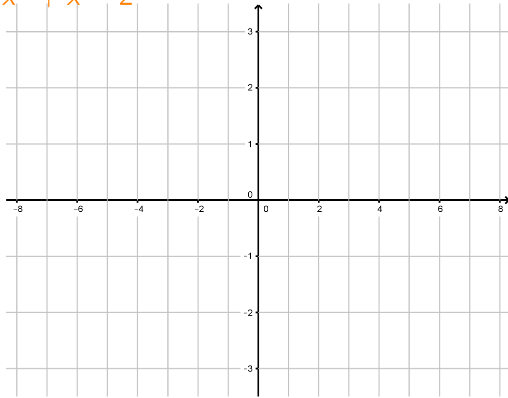

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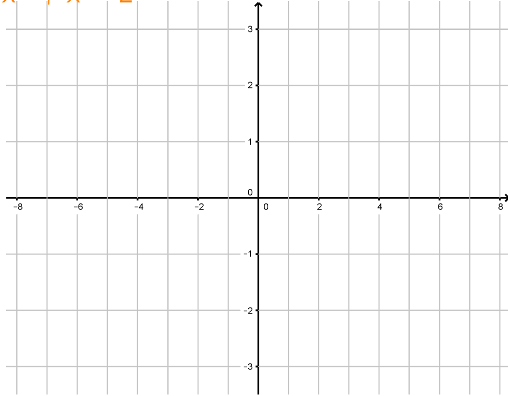

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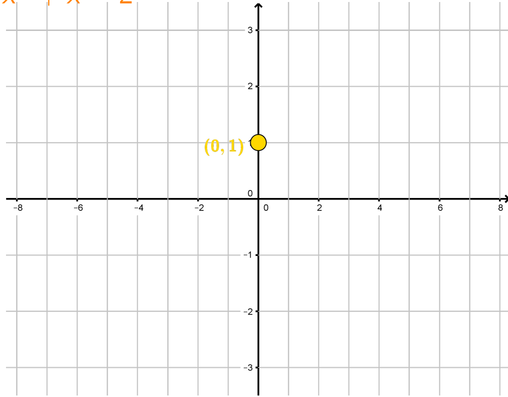

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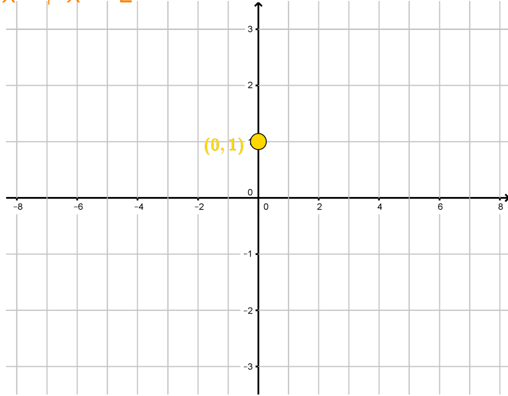

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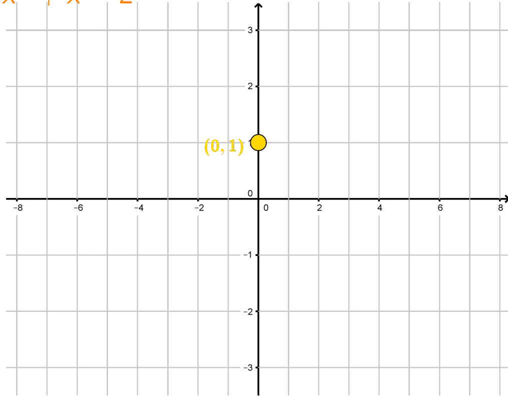

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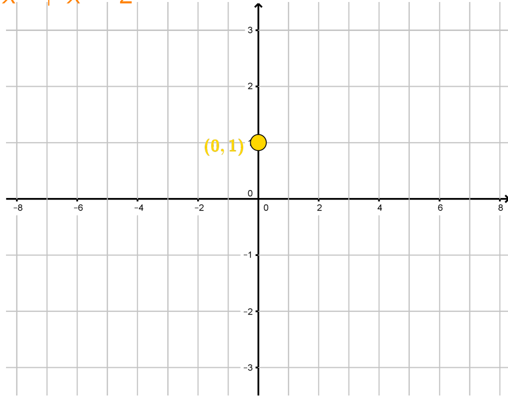

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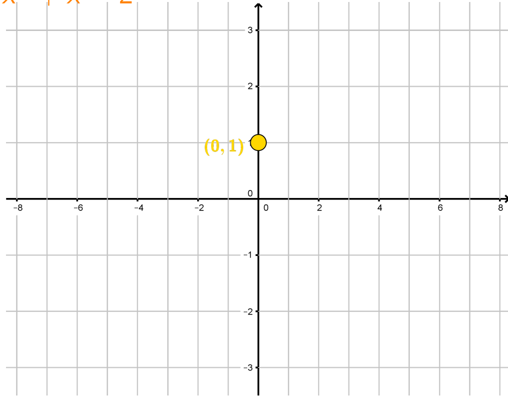

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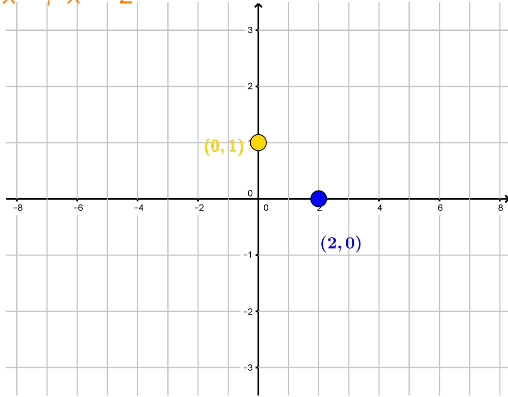

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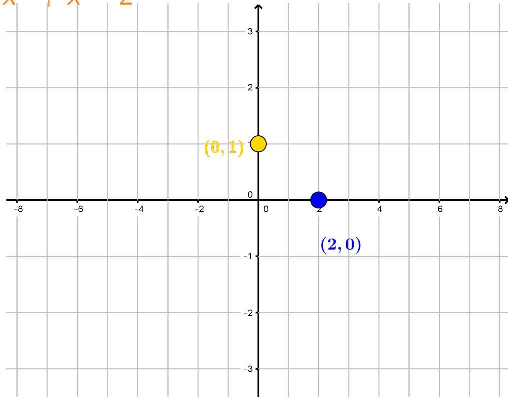

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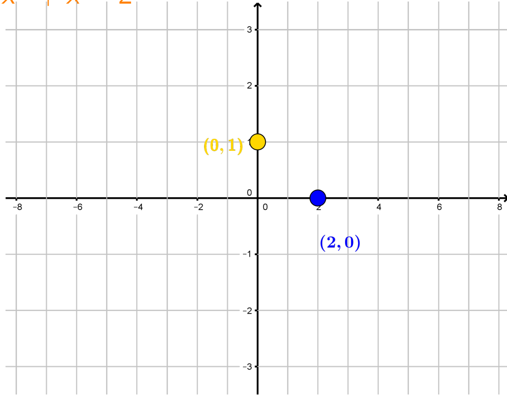

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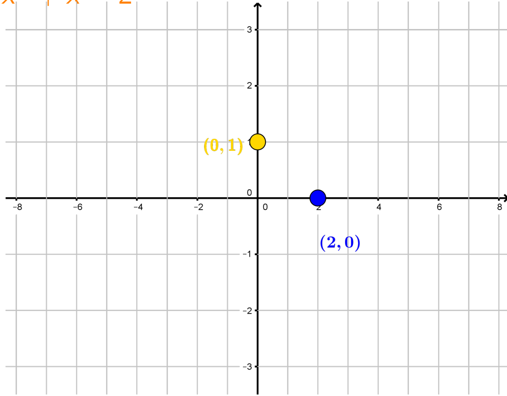

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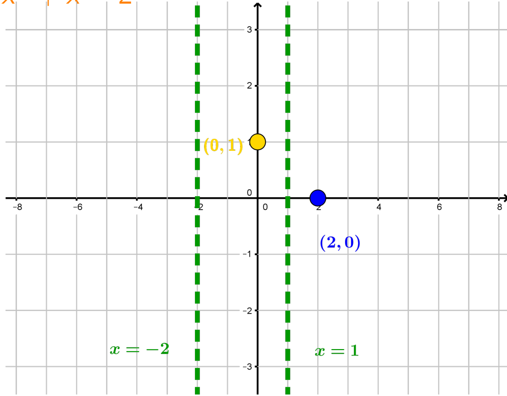

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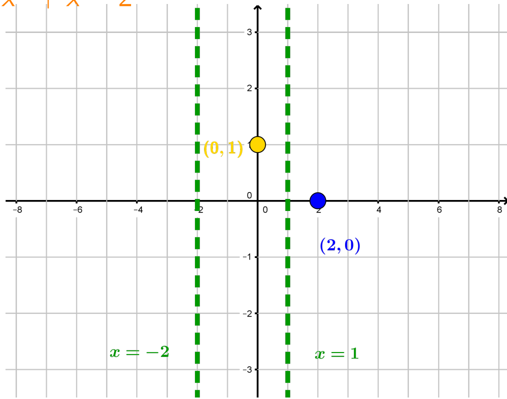

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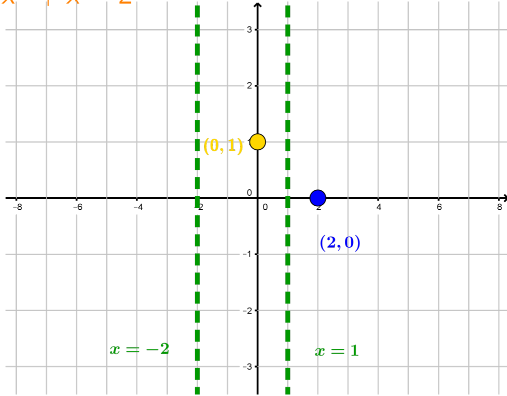

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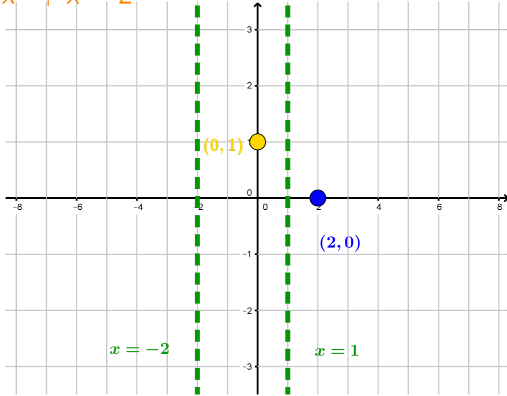

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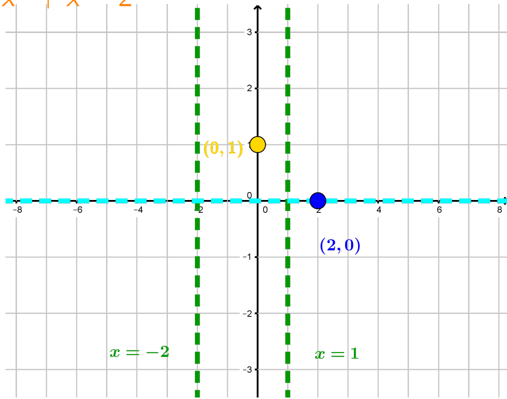

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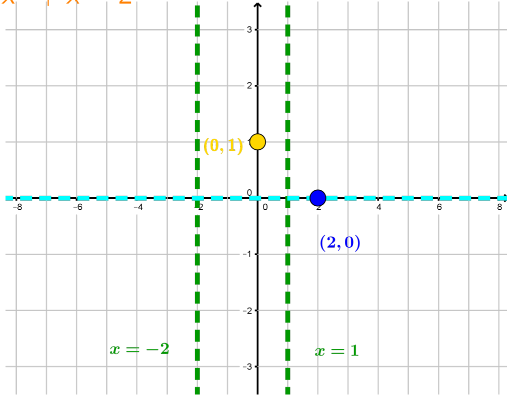

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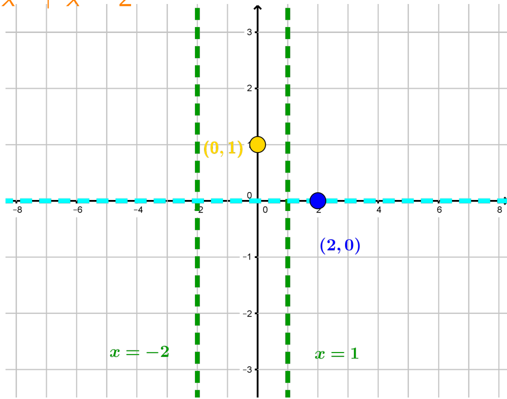

▸ Solving this polynomial gives: $x = 1, x = -2$

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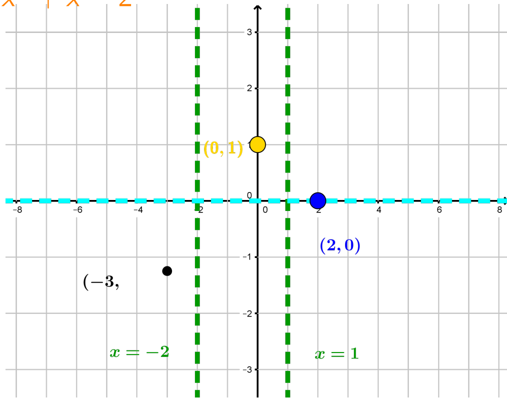

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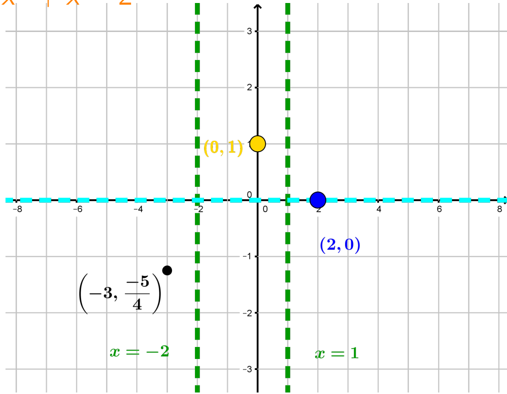

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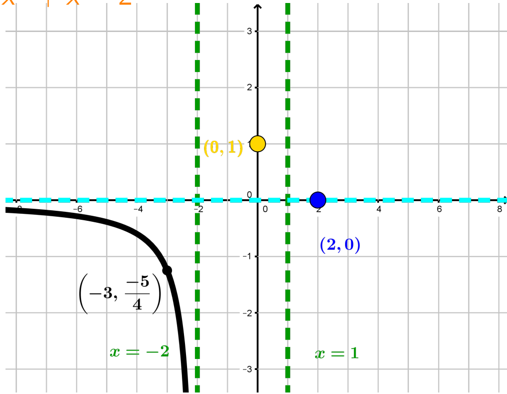

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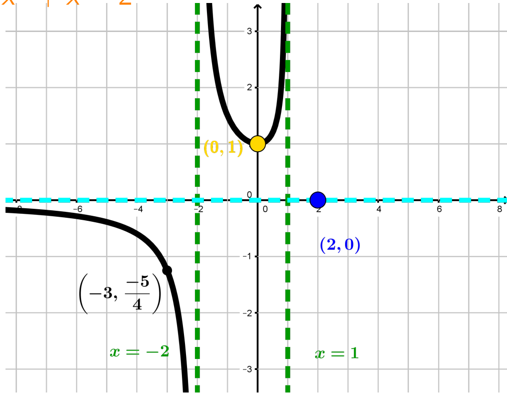

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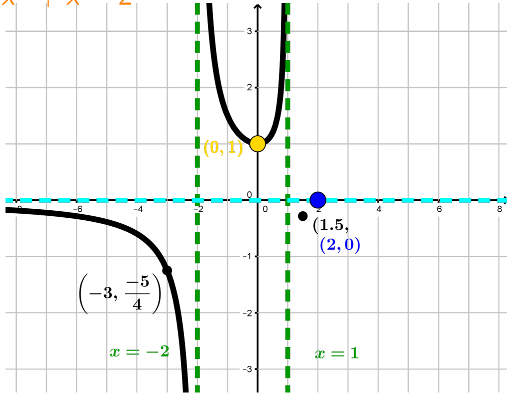

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Like Polynomials we need to check if $f(x) > 0$ or $f(x) < 0$ on some intervals

Since there are no more $x-$int we know where $f(x)$ can change sign

Graphing Rational Functions - Example 3

Example: Sketch the graph of:

$$f(x) = \frac{x-2}{x^2+x-2}$$

We need to find:

The $y-$int: $x = 0$

$f(0) = \frac{0-2}{0^2+0-2} = 1 \to (0, 1)$

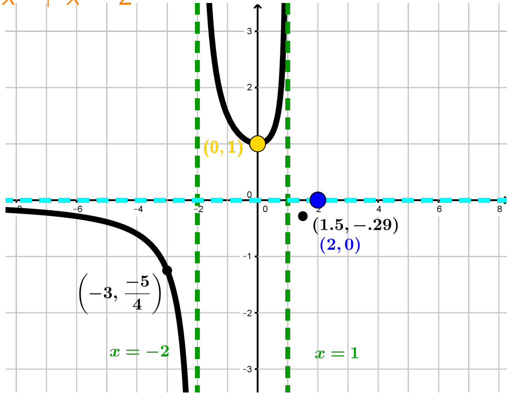
The $x-$int: $y = f(x) = 0$

We need to solve $0 = \frac{x-2}{x^2+x-2}$

We can by solving: $0 = x - 2$

This gives: $x = 2$

Vertical asymptotes:
$x^2 + x - 2 = 0$



Solving this polynomial gives: $x = 1, x = -2$

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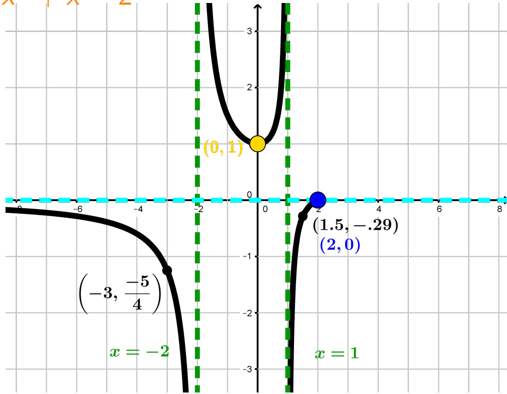

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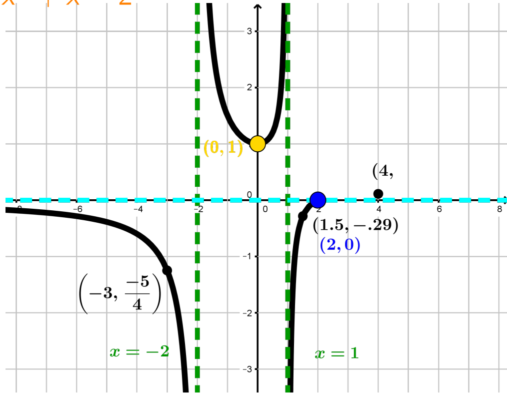

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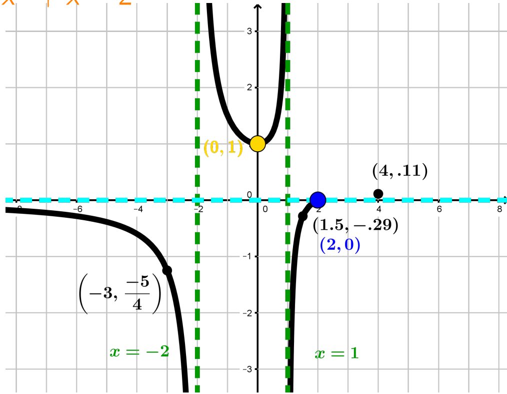

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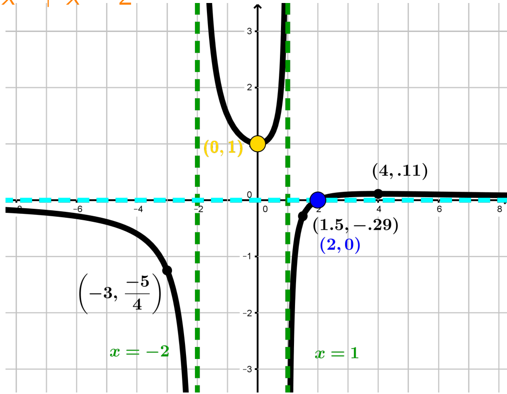

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