

Inequality Card #1

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Now simply plug in an easy integer from each “region” and figure out if your overall fraction is (+) or (-)

Peek when you are ready for the final answers: $[-\infty, -4)$ $(-1, 2)$ $[5, \infty)$

these are intervals
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Rational Card #2

$$\frac{2}{x+2} + \frac{3}{x} = \frac{-x}{x+2}$$

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Radical Card #3

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Answer: $x = 16$ and it checks

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Radical Card #4

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You should get $\frac{627}{7}$ but does it check?

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Answer(s): $x = -2$ and $x = 1$ and they actually BOTH work

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Inequality Card #6

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solve using NO Graphing Calculator techniques... make a number line to help determine the final interval(s)

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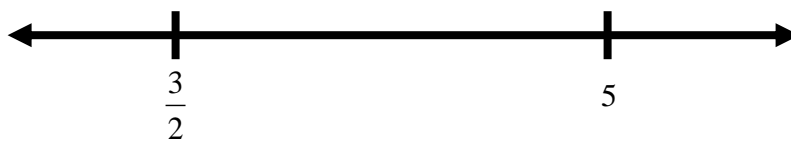
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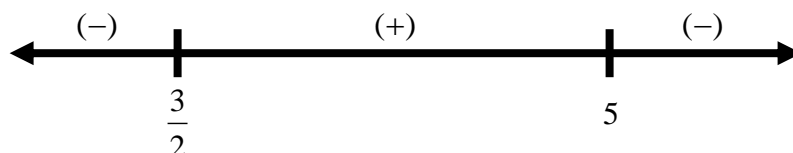
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Critical Points will be at $x = \frac{3}{2}$ and $x = 5$ so the number line becomes...

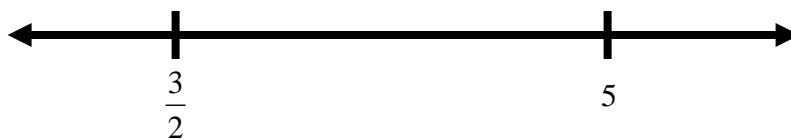


After plugging numbers from each "region" on the number line you should determine that

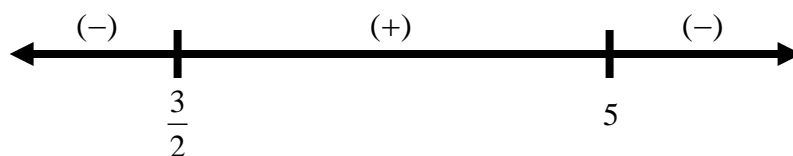


So Final Answer would be... $\frac{3}{2} < x < 5$

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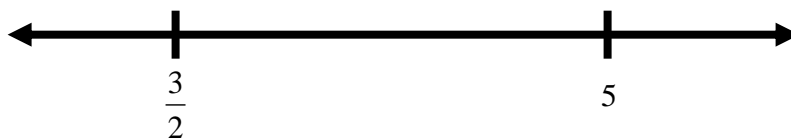


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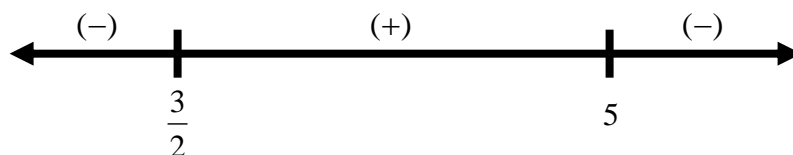


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Inequality Card #7

$$\frac{4x - 2}{x + 4} \leq 2$$

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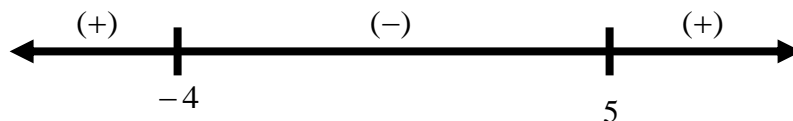
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solve using NO Graphing Calculator techniques... make a number line to help determine the final interval(s)

Critical Points will be at $x = -4$ and $x = 5$ so the number line becomes...



After plugging numbers from each “region” on the number line you should determine that



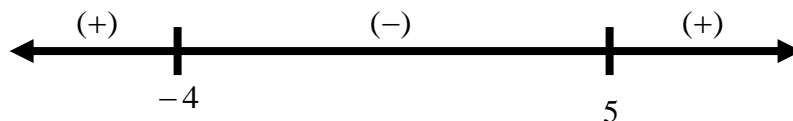
So Final Answer would be... $(-4, 5]$

Carefully note that we can NOT include “-4” since $x = -4$ produces a zero in the denominator.

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After plugging numbers from each “region” on the number line you should determine that



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Absolute Value

Card #8

$$|x^2 + 5x| = 6x - 2x^2$$

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Hint: Remember you should write two equations equal to (+) and (-)

Answers: When solved correctly you will get

$$x = 0 \text{ (twice),}$$

$$x = \frac{1}{3},$$

$$x = 11$$

but $x = 11$ does not work

Final Answers: $x = 0$ and $x = \frac{1}{3}$

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