

Questions about Rational Functions

- 1) Use the letters A-L to match the graph with its function
- 2) Give at least three separate reasons why this graph matches this function

graph from 4 and 8 $f(x) = \frac{2x+4}{3x-6} = \frac{2(x+2)}{3(x-2)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

graph from 5 $f(x) = \frac{2x^2+4}{3x-6} = \frac{2(x^2+2)}{3(x-2)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

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graph from 6 $f(x) = \frac{x^2-4}{3x^2-27} = \frac{(x-2)(x+2)}{3(x-3)(x+3)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

graph from 7 $f(x) = \frac{2x^2-8}{8x^3-1} = \frac{2(x-2)(x+2)}{(2x-1)(4x^2+2x+1)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

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graph from 9 $f(x) = \frac{x^2-4}{3x-9} = \frac{(x-2)(x+2)}{3(x-3)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

graph from 10 $f(x) = \frac{4x+16}{x^2-25} = \frac{4(x+4)}{(x-5)(x+5)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

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graph from 11 $f(x) = \frac{4x^2+16x}{x^2-16} = \frac{4x(x+4)}{(x-4)(x+4)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

graph from 12 $f(x) = \frac{x^2-8x-9}{3x-6} = \frac{(x+1)(x-9)}{3(x-2)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

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graph from 13 $f(x) = \frac{x+1}{x^2-1x-12} = \frac{x+1}{(x-4)(x+3)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

graph from 14 $f(x) = \frac{x^2+3x-10}{2x^2-10x} = \frac{(x+5)(x-2)}{2x(x-5)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

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graph from 15 $f(x) = \frac{x^2-3x-10}{2x^2-10x} = \frac{(x-5)(x-2)}{2x(x-5)}$ is Graph _____

reason 1 _____

reason 2 _____

reason 3 _____

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- 1) Use the letters A-L to match the graph with its function

Which TWO functions had a hole? Graph _____ and Graph _____

State the NEW functions for each of these functions

Graph _____ is really _____

Graph _____ is really _____

Briefly explain why a hole occurs on the graph of a rational function

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Which three functions had a SLANT asymptote (these were not drawn on the graphs)?

Graph _____, Graph _____, and Graph _____

Briefly explain why a rational function would have a slant asymptote