1. Determine the horizontal and/or oblique asymptotes in the rational function below.

$$f(x) = \frac{15x^3 + 11x^2 - 2x - 24}{9x^3 + 27x^2 - 46x - 40}$$

A. Vertical Asymptote of $y = -4$

B. Horizontal Asymptote of $y = 0.600$

C. Horizontal Asymptote of $y = 0$

D. Vertical Asymptote of $y = 0.600$

E. None of the above

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2. Determine the vertical asymptotes and holes in the rational function below.

$$f(x) = \frac{9x^3 + 39x^2 + 52x + 20}{9x^2 - 9x - 10}$$

A. Vertical Asymptotes of $x = 1.667$ and $x = -0.667$ with no holes.

B. Vertical Asymptote of $x = 1.0$ and hole at $x = -0.667$

C. Vertical Asymptote of $x = 1.667$ and hole at $x = -0.667$

D. Vertical Asymptotes of $x = 1.667$ and $x = -1.667$ with a hole at $x = -0.667$

E. Holes at $x = 1.667$ and $x = -0.667$ with no vertical asymptotes.

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3. Determine the vertical asymptotes and holes in the rational function below.

$$f(x) = \frac{9x^3 + 36x^2 + 47x + 20}{12x^2 + 31x + 20}$$

A. Vertical Asymptotes of $x = -1.25$ and $x = -1.333$ with no holes.

B. Vertical Asymptotes of $x = -1.25$ and $x = -1.667$ with a hole at $x = -1.333$

C. Vertical Asymptote of $x = 0.75$ and hole at $x = -1.333$

D. Vertical Asymptote of $x = -1.25$ and hole at $x = -1.333$

E. Holes at $x = -1.25$ and $x = -1.333$ with no vertical asymptotes.

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4. Determine the horizontal and/or oblique asymptotes in the rational function below.

$$f(x) = \frac{6x^3 + 7x^2 - 11x - 12}{3x^2 + 2x - 8}$$

A. Horizontal Asymptote of $y = -2.0$ and Oblique Asymptote of $y = 2x + 1$

B. Oblique Asymptote of $y = 2x + 1$.

C. Horizontal Asymptote at $y = -2.0$

D. Horizontal Asymptote of $y = 2.0$ and Oblique Asymptote of $y = 2x + 1$

E. Horizontal Asymptote of $y = 2.0$

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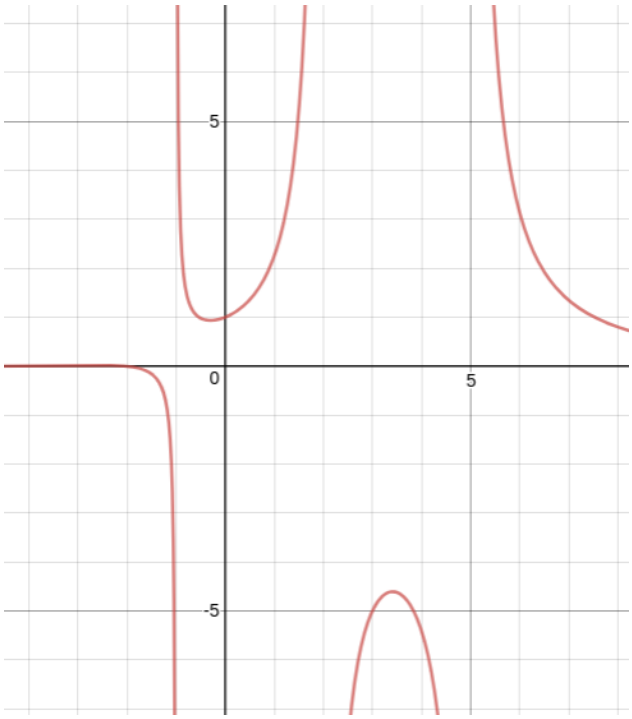
5. Which of the following functions *could* be the graph below?




A. $f(x) = \dfrac{x^3 - 15x^2 + 74x - 120}{x^3 - 5x^2 - 8x + 12}$

B. $f(x) = \dfrac{x^3 + 9x^2 + 14x - 24}{x^3 - 6x^2 + 3x + 10}$

C. $f(x) = \dfrac{x^3 + 7x^2 - 36}{x^3 + 6x^2 + 3x - 10}$

D. $f(x) = \dfrac{x^3 + 10x^2 + 31x + 30}{x^3 - 7x^2 + 4x + 12}$

E. None of the above are possible equations for the graph.

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