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

$$f(x) = \frac{8x^3 - 48x^2 + 132x - 80}{8x^3 - 58x^2 + 119x - 60}$$

A. Vertical Asymptote of $y = 1.000$

B. Horizontal Asymptote of $y = 0$

C. Horizontal Asymptote of $y = 1.000$

D. Vertical Asymptote of $y = 4$

E. None of the above

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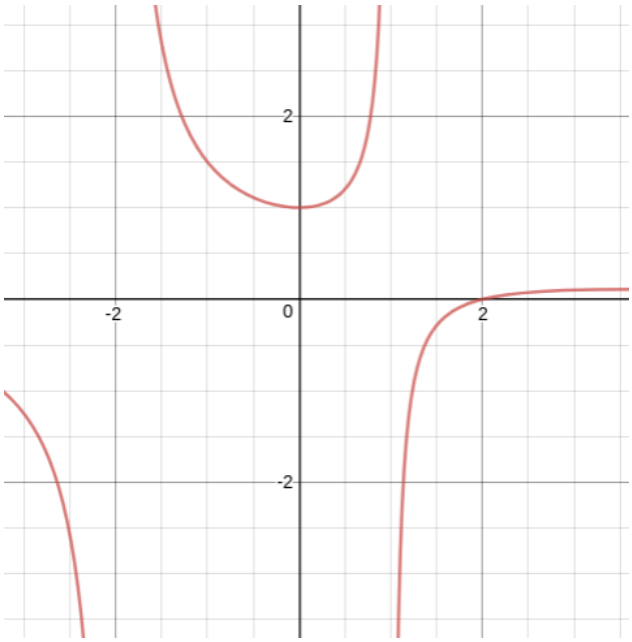
2. Which of the following functions *could* be the graph below?



A. $f(x) = \dfrac{x^3 + x^2 - 24x + 36}{x^3 + 6x^2 + 3x - 10}$

B. $f(x) = \dfrac{x^3 + 6x^2 - 16x - 96}{x^3 - 5x^2 + 2x + 8}$

C. $f(x) = \dfrac{x^3 + 7x^2 + 4x - 12}{x^3 - 6x^2 + 3x + 10}$

D. $f(x) = \dfrac{x^3 - 31x - 30}{x^3 - 3x^2 - 6x + 8}$

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

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

$$f(x) = \frac{9x^3 - 45x^2 + 74x - 40}{12x^2 - 29x + 15}$$

A. Vertical Asymptotes of $x = 0.75$ and $x = 1.667$ with no holes.

B. Vertical Asymptote of $x = 0.75$ and hole at $x = 1.667$

C. Vertical Asymptote of $x = 0.75$ and hole at $x = 1.667$

D. Holes at $x = 0.75$ and $x = 1.667$ with no vertical asymptotes.

E. Vertical Asymptotes of $x = 0.75$ and $x = 1.333$ with a hole at $x = 1.667$

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

$$f(x) = \frac{8x^3 - 10x^2 - 57x + 45}{4x^2 - 23x + 15}$$

A. Horizontal Asymptote of $y = 5.0$ and Oblique Asymptote of $y = 2x + 9$

B. Horizontal Asymptote at $y = 5.0$

C. Oblique Asymptote of $y = 2x + 9$.

D. Horizontal Asymptote of $y = 2.0$

E. Horizontal Asymptote of $y = 2.0$ and Oblique Asymptote of $y = 2x + 9$

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

$$f(x) = \frac{12x^3 + 59x^2 + 95x + 50}{9x^2 + 9x - 10}$$

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

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

C. Vertical Asymptote of $x = 1.333$ and hole at $x = -1.667$

D. Vertical Asymptotes of $x = 0.667$ and $x = -1.25$ with a hole at $x = -1.667$

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