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

$$f(x) = \frac{12x^3 + 5x^2 - 43x - 30}{8x^2 + 18x + 9}$$

A. Vertical Asymptote of $x = -1.5$ and hole at $x = -0.75$

B. Vertical Asymptotes of $x = -1.5$ and $x = -1.667$ with a hole at $x = -0.75$

C. Vertical Asymptotes of $x = -1.5$ and $x = -0.75$ with no holes.

D. Vertical Asymptote of $x = 1.5$ and hole at $x = -0.75$

E. Holes at $x = -1.5$ and $x = -0.75$ with no vertical asymptotes.

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

$$f(x) = \frac{12x^3 - 11x^2 - 7x + 6}{4x^2 - 9x - 9}$$

A. Horizontal Asymptote of $y = 3.0$ and Oblique Asymptote of $y = 3x + 4$

B. Horizontal Asymptote at $y = 3.0$

C. Horizontal Asymptote of $y = 3.0$

D. Horizontal Asymptote of $y = 3.0$ and Oblique Asymptote of $y = 3x + 4$

E. Oblique Asymptote of $y = 3x + 4$.

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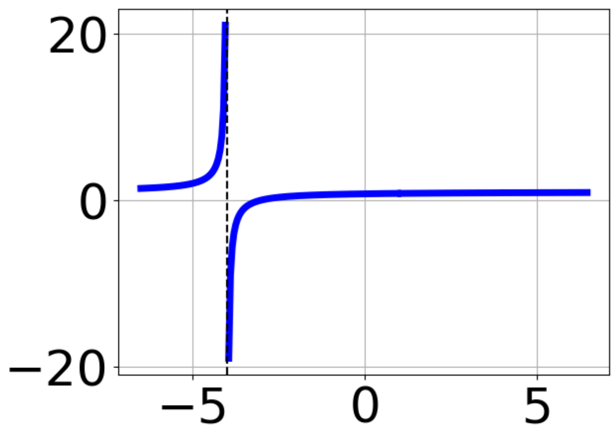
3. Which of the following functions *could* be the graph below?



A. $f(x) = \dfrac{x^3 + 2x^2 - 11x - 12}{x^3 + x^2 - 16x - 16}$

B. $f(x) = \dfrac{x^3 - 2x^2 - 11x + 12}{x^3 - 1x^2 - 16x + 16}$

C. $f(x) = \dfrac{x^3 + 11x^2 + 36x + 36}{x^3 - 1x^2 - 16x + 16}$

D. $f(x) = \dfrac{x^3 + 2x^2 - 11x - 12}{x^3 + x^2 - 16x - 16}$

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

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

$$f(x) = \frac{12x^3 - 1x^2 - 80x - 75}{6x^2 + x - 15}$$

A. Vertical Asymptote of $x = 2.0$ and hole at $x = -1.667$

B. Vertical Asymptotes of $x = 1.5$ and $x = -1.667$ with no holes.

C. Vertical Asymptote of $x = 1.5$ and hole at $x = -1.667$

D. Holes at $x = 1.5$ and $x = -1.667$ with no vertical asymptotes.

E. Vertical Asymptotes of $x = 1.5$ and $x = -1.25$ with a hole at $x = -1.667$

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

$$f(x) = \frac{8x^3 + 46x^2 + 81x + 45}{16x^3 + 32x^2 + 26x - 30}$$

A. Vertical Asymptote of $y = -3$

B. Horizontal Asymptote of $y = 0.500$

C. None of the above

D. Horizontal Asymptote of $y = 0$

E. Vertical Asymptote of $y = 0.500$

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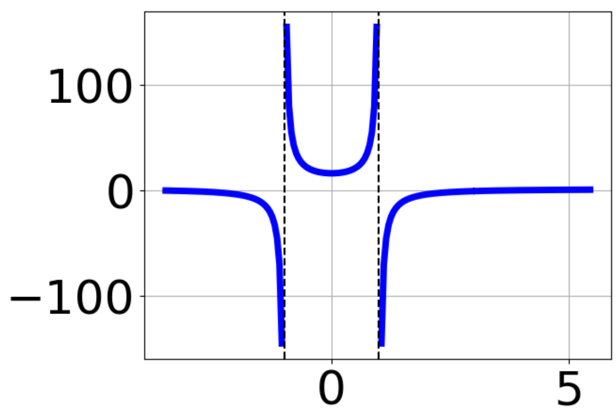
6. Which of the following functions *could* be the graph below?



A. $f(x) = \dfrac{x^3 + 3x^2 - 16x - 48}{x^3 + 3x^2 - x - 3}$

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

C. $f(x) = \dfrac{x^3 - 3x^2 - 16x + 48}{x^3 - 3x^2 - x + 3}$

D. $f(x) = \dfrac{x^3 + 3x^2 - 16x - 48}{x^3 + 3x^2 - x - 3}$

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

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

$$f(x) = \frac{8x^3 + 10x^2 - 37x - 30}{2x^2 + 15x + 25}$$

A. Horizontal Asymptote of $y = -5.0$ and Oblique Asymptote of $y = 4x - 25$

B. Horizontal Asymptote of $y = 4.0$

C. Horizontal Asymptote of $y = 4.0$ and Oblique Asymptote of $y = 4x - 25$

D. Horizontal Asymptote at $y = -5.0$

E. Oblique Asymptote of $y = 4x - 25$.

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

$$f(x) = \frac{6x^3 - 5x^2 - 61x - 60}{6x^2 - x - 15}$$

A. Holes at $x = 1.667$ and $x = -1.5$ with no vertical asymptotes.

B. Vertical Asymptotes of $x = 1.667$ and $x = -1.5$ with no holes.

C. Vertical Asymptote of $x = 1.0$ and hole at $x = -1.5$

D. Vertical Asymptote of $x = 1.667$ and hole at $x = -1.5$

E. Vertical Asymptotes of $x = 1.667$ and $x = -1.667$ with a hole at $x = -1.5$

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

$$f(x) = \frac{15x^3 - 73x^2 + 32x + 80}{5x^3 - 2x^2 + 16x + 32}$$

A. None of the above

B. Vertical Asymptote of $y = 2.000$

C. Vertical Asymptote of $y = 4$

D. Horizontal Asymptote of $y = 3.000$

E. Horizontal Asymptote of $y = 0$

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

$$f(x) = \frac{8x^3 - 14x^2 - 35x + 50}{8x^2 + 2x - 15}$$

A. Vertical Asymptotes of $x = -1.5$ and $x = 2.5$ with a hole at $x = 1.25$

B. Vertical Asymptotes of $x = -1.5$ and $x = 1.25$ with no holes.

C. Vertical Asymptote of $x = -1.5$ and hole at $x = 1.25$

D. Vertical Asymptote of $x = 1.0$ and hole at $x = 1.25$

E. Holes at $x = -1.5$ and $x = 1.25$ with no vertical asymptotes.
