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

$$f(x) = \frac{12x^3 - 35x^2 + 7x + 30}{9x^2 - 3x - 20}$$

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

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

C. Holes at $x = -1.333$ and $x = 1.667$ with no vertical asymptotes.

D. Vertical Asymptotes of $x = -1.333$ and $x = 1.667$ with no holes.

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

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

$$f(x) = \frac{8x^3 - 26x^2 - 5x + 50}{16x^2 + 32x + 15}$$

A. Vertical Asymptote of $x = 0.5$ and hole at $x = -1.25$

B. Vertical Asymptotes of $x = -0.75$ and $x = 2.5$ with a hole at $x = -1.25$

C. Holes at $x = -0.75$ and $x = -1.25$ with no vertical asymptotes.

D. Vertical Asymptotes of $x = -0.75$ and $x = -1.25$ with no holes.

E. Vertical Asymptote of $x = -0.75$ and hole at $x = -1.25$

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

$$f(x) = \frac{16x^3 + 48x^2 + 47x + 15}{8x^3 + 24x^2 + 27x + 9}$$

A. None of the above

B. Horizontal Asymptote of $y = 0$

C. Vertical Asymptote of $y = -1.500$

D. Vertical Asymptote of $y = -1$

E. Horizontal Asymptote of $y = 2.000$

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

$$f(x) = \frac{6x^3 + 37x^2 + 67x + 30}{6x^2 + 13x + 6}$$

A. Holes at $x = -1.5$ and $x = -0.667$ with no vertical asymptotes.

B. Vertical Asymptotes of $x = -1.5$ and $x = -0.667$ with no holes.

C. Vertical Asymptote of $x = -1.5$ and hole at $x = -0.667$

D. Vertical Asymptotes of $x = -1.5$ and $x = -2.5$ with a hole at $x = -0.667$

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

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

$$f(x) = \frac{9x^3 - 27x^2 - 16x + 48}{9x^2 - 3x - 20}$$

A. Vertical Asymptotes of $x = 1.667$ and $x = -1.333$ with no holes.

B. Holes at $x = 1.667$ and $x = -1.333$ with no vertical asymptotes.

C. Vertical Asymptote of $x = 1.0$ and hole at $x = -1.333$

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

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

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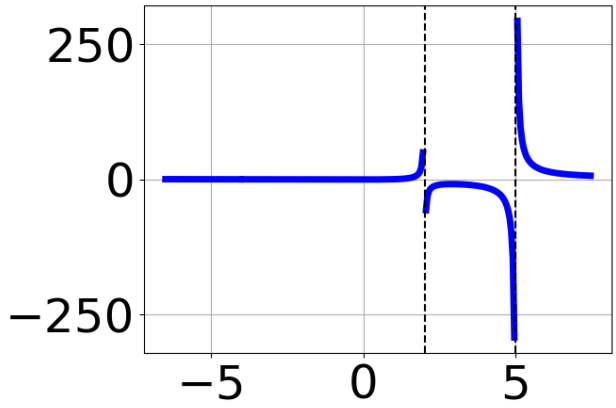
6. Which of the following functions *could* be the graph below?



A. $f(x) = \dfrac{x^3 + 9x^2 + 14x - 24}{x^3 - 3x^2 - 18x + 40}$

B. $f(x) = \dfrac{x^3 + 10x^2 + 19x - 30}{x^3 - 3x^2 - 18x + 40}$

C. $f(x) = \dfrac{x^3 - 9x^2 + 14x + 24}{x^3 + 3x^2 - 18x - 40}$

D. $f(x) = \dfrac{x^3 - 9x^2 + 14x + 24}{x^3 + 3x^2 - 18x - 40}$

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.

$$f(x) = \frac{6x^3 - 1x^2 - 75x + 100}{3x^2 + 7x - 20}$$

A. Horizontal Asymptote at $y = -4.0$

B. Oblique Asymptote of $y = 2x - 5$.

C. Horizontal Asymptote of $y = -4.0$ and Oblique Asymptote of $y = 2x - 5$

D. Horizontal Asymptote of $y = 2.0$ and Oblique Asymptote of $y = 2x - 5$

E. Horizontal Asymptote of $y = 2.0$

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

$$f(x) = \frac{8x^3 + 54x^2 + 103x + 60}{4x^3 - 6x^2 - 64x - 80}$$

A. None of the above

B. Vertical Asymptote of $y = 4.000$

C. Vertical Asymptote of $y = -4$

D. Horizontal Asymptote of $y = 2.000$

E. Horizontal Asymptote of $y = 0$

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

$$f(x) = \frac{8x^3 - 38x^2 + 55x - 25}{4x^2 + 3x - 10}$$

A. Horizontal Asymptote of $y = 2.0$ and Oblique Asymptote of $y = 2x - 11$

B. Oblique Asymptote of $y = 2x - 11$.

C. Horizontal Asymptote at $y = -2.0$

D. Horizontal Asymptote of $y = -2.0$ and Oblique Asymptote of $y = 2x - 11$

E. Horizontal Asymptote of $y = 2.0$

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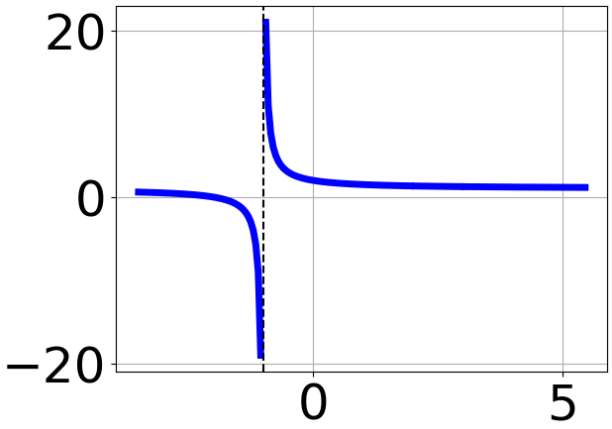
10. Which of the following functions *could* be the graph below?



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

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

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

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

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