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

$$f(x) = \frac{4x^3 - 16x^2 - 25x + 100}{2x^2 + 9x + 10}$$

A. Horizontal Asymptote at $y = -2.000$

B. Horizontal Asymptote of $y = 0$

C. Horizontal Asymptote of $y = 2.000$ and Oblique Asymptote of $y = 2x - 17$

D. Oblique Asymptote of $y = 2x - 17$.

E. Horizontal Asymptote of $y = 2.000$

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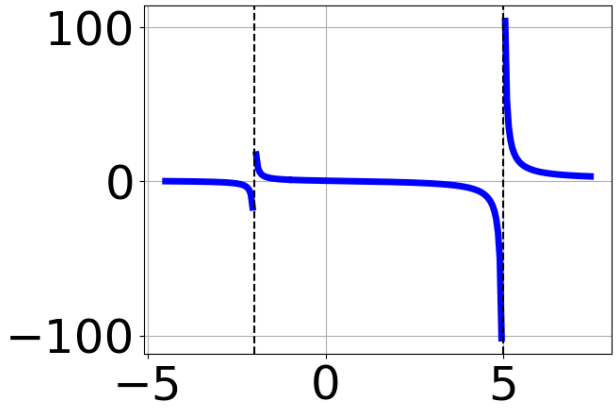
2. Which of the following functions *could* be the graph below?



A. $f(x) = \dfrac{x^3 - 4x^2 - x + 4}{x^3 + 2x^2 - 13x + 10}$

B. $f(x) = \dfrac{x^3 - 1x^2 - 16x + 16}{x^3 - 2x^2 - 13x - 10}$

C. $f(x) = \dfrac{x^3 - 4x^2 - x + 4}{x^3 + 2x^2 - 13x + 10}$

D. $f(x) = \dfrac{x^3 + 4x^2 - x - 4}{x^3 - 2x^2 - 13x - 10}$

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.

$$f(x) = \frac{9x^3 + 12x^2 - 17x - 20}{9x^2 - 6x - 8}$$

A. Holes at $x = -0.667$ and $x = 1.333$ with no vertical asymptotes.

B. Vertical Asymptote of $x = -0.667$ and hole at $x = 1.333$

C. Vertical Asymptotes of $x = -0.667$ and $x = 1.333$ with no holes.

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

E. Vertical Asymptotes of $x = -0.667$ and $x = -1.667$ with a hole at $x = 1.333$

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

$$f(x) = \frac{9x^3 + 42x^2 + 16x - 32}{12x^2 + x - 20}$$

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

B. Vertical Asymptotes of $x = 1.25$ and $x = 0.667$ with a hole at $x = -1.333$

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

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

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

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

$$f(x) = \frac{6x^3 - 5x^2 - 34x + 40}{3x^2 + 8x - 16}$$

A. Oblique Asymptote of $y = 2x - 7$.

B. Horizontal Asymptote at $y = -4.0$

C. Horizontal Asymptote of $y = 2.0$

D. Horizontal Asymptote of $y = -4.0$ and Oblique Asymptote of $y = 2x - 7$

E. Horizontal Asymptote of $y = 2.0$ and Oblique Asymptote of $y = 2x - 7$

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

$$f(x) = \frac{6x^3 + 11x^2 - 17x - 30}{3x^2 + x - 10}$$

A. Horizontal Asymptote of $y = -2.0$ and Oblique Asymptote of $y = 2x + 3$

B. Horizontal Asymptote at $y = -2.0$

C. Horizontal Asymptote of $y = 2.0$ and Oblique Asymptote of $y = 2x + 3$

D. Oblique Asymptote of $y = 2x + 3$.

E. Horizontal Asymptote of $y = 2.0$

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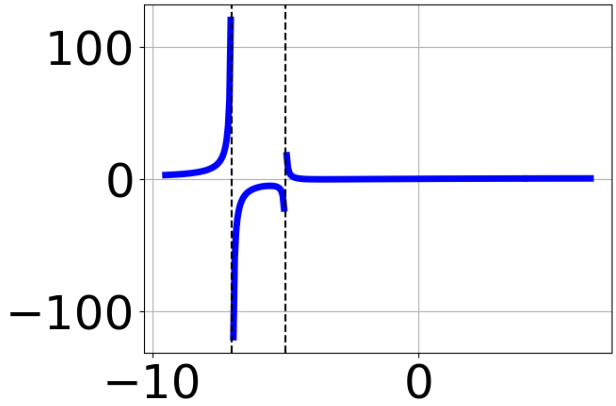
7. Which of the following functions *could* be the graph below?



A. $f(x) = \dfrac{x^3 + 10x^2 + 33x + 36}{x^3 + 8x^2 - 13x - 140}$

B. $f(x) = \dfrac{x^3 + 3x^2 - 16x - 48}{x^3 + 8x^2 - 13x - 140}$

C. $f(x) = \dfrac{x^3 - 3x^2 - 16x + 48}{x^3 - 8x^2 - 13x + 140}$

D. $f(x) = \dfrac{x^3 - 3x^2 - 16x + 48}{x^3 - 8x^2 - 13x + 140}$

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

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

$$f(x) = \frac{9x^3 + 24x^2 + 4x - 16}{9x^2 + 18x + 8}$$

A. Holes at $x = -0.667$ and $x = -1.333$ with no vertical asymptotes.

B. Vertical Asymptotes of $x = -0.667$ and $x = 0.667$ with a hole at $x = -1.333$

C. Vertical Asymptote of $x = -0.667$ and hole at $x = -1.333$

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

E. Vertical Asymptotes of $x = -0.667$ and $x = -1.333$ with no holes.

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

$$f(x) = \frac{6x^3 - 13x^2 - 9x + 10}{9x^2 - 18x + 8}$$

A. Vertical Asymptote of $x = 0.667$ and hole at $x = 0.667$

B. Holes at $x = 1.333$ and $x = 0.667$ with no vertical asymptotes.

C. Vertical Asymptotes of $x = 1.333$ and $x = 2.5$ with a hole at $x = 0.667$

D. Vertical Asymptote of $x = 1.333$ and hole at $x = 0.667$

E. Vertical Asymptotes of $x = 1.333$ and $x = 0.667$ with no holes.

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

$$f(x) = \frac{15x^3 + 61x^2 + 72x + 20}{20x^3 + 31x^2 + 52x + 12}$$

A. Horizontal Asymptote of $y = 0.750$

B. Vertical Asymptote of $y = -2$

C. None of the above

D. Horizontal Asymptote of $y = 0$

E. Vertical Asymptote of $y = -0.750$