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

$$f(x) = \frac{8x^3 + 14x^2 - 7x - 15}{2x^2 - 3x - 9}$$

A. Horizontal Asymptote of $y = 4.0$

B. Horizontal Asymptote of $y = 3.0$ and Oblique Asymptote of $y = 4x + 13$

C. Horizontal Asymptote at $y = 3.0$

D. Horizontal Asymptote of $y = 4.0$ and Oblique Asymptote of $y = 4x + 13$

E. Oblique Asymptote of $y = 4x + 13$.

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

$$f(x) = \frac{6x^2 + 19x - 20}{30x^3 - 133x^2 + 144x - 45}$$

A. Oblique Asymptote of $y = 5x - 38$.

B. Horizontal Asymptote of $y = 0$

C. Horizontal Asymptote at $y = -4.000$

D. Horizontal Asymptote of $y = 0.200$ and Oblique Asymptote of $y = 5x - 38$

E. Horizontal Asymptote of $y = 0.200$

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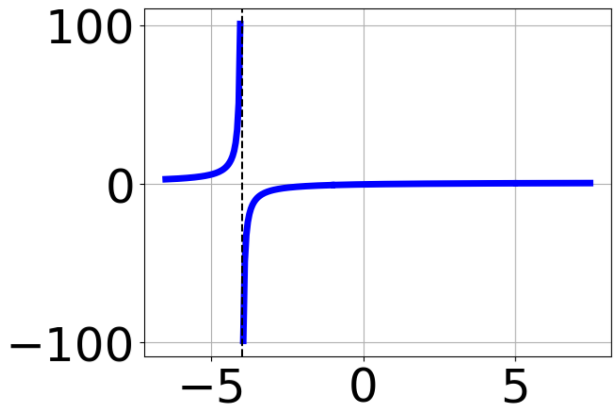
3. Which of the following functions *could* be the graph below?



A. $f(x) = \dfrac{x^3 + 8x^2 + 5x - 14}{x^3 - 21x - 20}$

B. $f(x) = \dfrac{x^3 + 5x^2 - x - 5}{x^3 - 21x + 20}$

C. $f(x) = \dfrac{x^3 + 5x^2 - x - 5}{x^3 - 21x + 20}$

D. $f(x) = \dfrac{x^3 - 5x^2 - x + 5}{x^3 - 21x - 20}$

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

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

$$f(x) = \frac{6x^3 + 31x^2 + 8x - 80}{3x^2 + 8x - 16}$$

A. Horizontal Asymptote of $y = 2.0$

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

C. Oblique Asymptote of $y = 2x + 5$.

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

E. Horizontal Asymptote at $y = -4.0$

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5. 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 Asymptotes of $x = 1.333$ and $x = 0.667$ with no holes.
   B. Vertical Asymptote of $x = 1.333$ and hole at $x = 0.667$
   C. Vertical Asymptote of $x = 0.667$ and hole at $x = 0.667$
   D. Holes at $x = 1.333$ and $x = 0.667$ with no vertical asymptotes.
   E. Vertical Asymptotes of $x = 1.333$ and $x = 2.5$ with a hole at $x = 0.667$

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6. Determine the vertical asymptotes and holes in the rational function below.
$$f(x) = \frac{6x^3 + 35x^2 + 34x - 40}{12x^2 + x - 6}$$
   A. Vertical Asymptote of $x = -0.75$ and hole at $x = 0.667$
   B. Vertical Asymptotes of $x = -0.75$ and $x = -2.5$ with a hole at $x = 0.667$
   C. Vertical Asymptotes of $x = -0.75$ and $x = 0.667$ with no holes.
   D. Vertical Asymptote of $x = 0.5$ and hole at $x = 0.667$
   E. Holes at $x = -0.75$ and $x = 0.667$ with no vertical asymptotes.

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7. Determine the horizontal and/or oblique asymptotes in the rational function below.
$$f(x) = \frac{2x^2 - 15x + 25}{8x^3 - 6x^2 - 29x - 15}$$
   A. Horizontal Asymptote at $y = 5.000$
   B. Horizontal Asymptote of $y = 0.250$ and Oblique Asymptote of $y = 4x + 27$
   C. Horizontal Asymptote of $y = 0.250$

D. Horizontal Asymptote of $y = 0$

E. Oblique Asymptote of $y = 4x + 27$.

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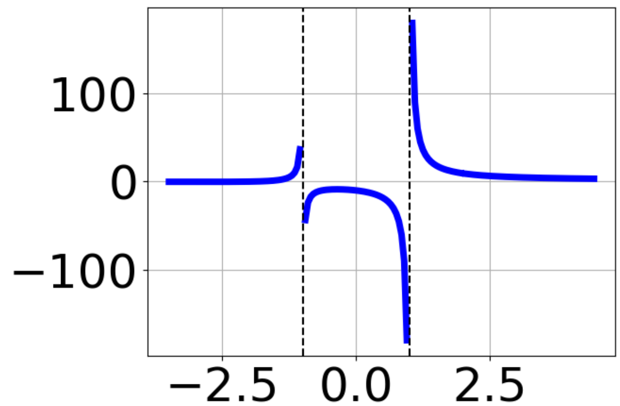
8. Which of the following functions *could* be the graph below?



A. $f(x) = \dfrac{x^3 - 5x^2 - 4x + 20}{x^3 + 2x^2 - x - 2}$

B. $f(x) = \dfrac{x^3 + x^2 - 32x - 60}{x^3 - 2x^2 - x + 2}$

C. $f(x) = \dfrac{x^3 - 5x^2 - 4x + 20}{x^3 + 2x^2 - x - 2}$

D. $f(x) = \dfrac{x^3 + 5x^2 - 4x - 20}{x^3 - 2x^2 - x + 2}$

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

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

$$f(x) = \frac{9x^3 - 18x^2 - x + 10}{6x^2 + 19x + 10}$$

A. Vertical Asymptote of $x = -2.5$ and hole at $x = -0.667$

B. Vertical Asymptotes of $x = -2.5$ and $x = -0.667$ with no holes.

C. Vertical Asymptotes of $x = -2.5$ and $x = 1.667$ with a hole at $x = -0.667$

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

E. Holes at $x = -2.5$ and $x = -0.667$ with no vertical asymptotes.

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

$$f(x) = \frac{9x^3 + 33x^2 - 32x - 80}{6x^2 - 7x - 20}$$

A. Vertical Asymptotes of $x = 2.5$ and $x = -1.333$ with no holes.

B. Vertical Asymptote of $x = 1.5$ and hole at $x = -1.333$

C. Vertical Asymptote of $x = 2.5$ and hole at $x = -1.333$

D. Holes at $x = 2.5$ and $x = -1.333$ with no vertical asymptotes.

E. Vertical Asymptotes of $x = 2.5$ and $x = 1.667$ with a hole at $x = -1.333$
