

1. Sketch the graph of the following function. Clearly identify all intercepts and asymptotes.

$$f(x) = \frac{-4}{x-2}$$

2. Sketch the graph of the following function. Clearly identify all intercepts and asymptotes.

$$f(x) = \frac{6-2x}{1-x}$$

3. Sketch the graph of the following function. Clearly identify all intercepts and asymptotes.

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

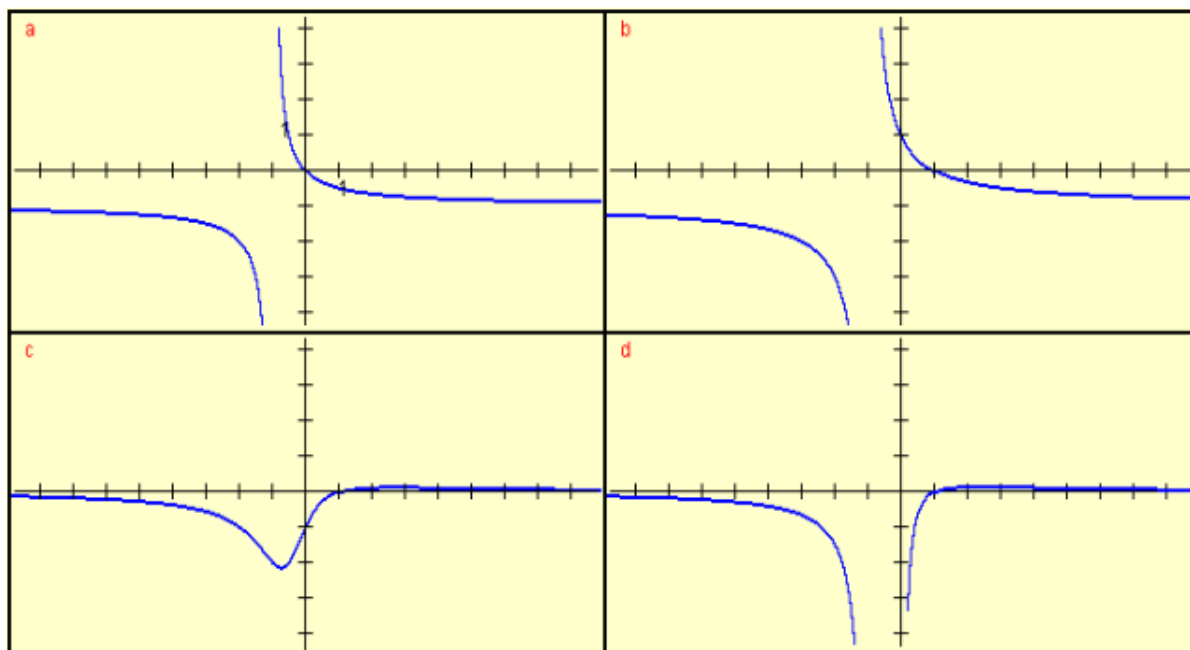
4. Sketch the graph of the following function. Clearly identify all intercepts and asymptotes.

$$f(x) = \frac{4x^2 - 36}{x^2 - 2x - 8}$$

5

Identify the possible graph of the rational function f given by

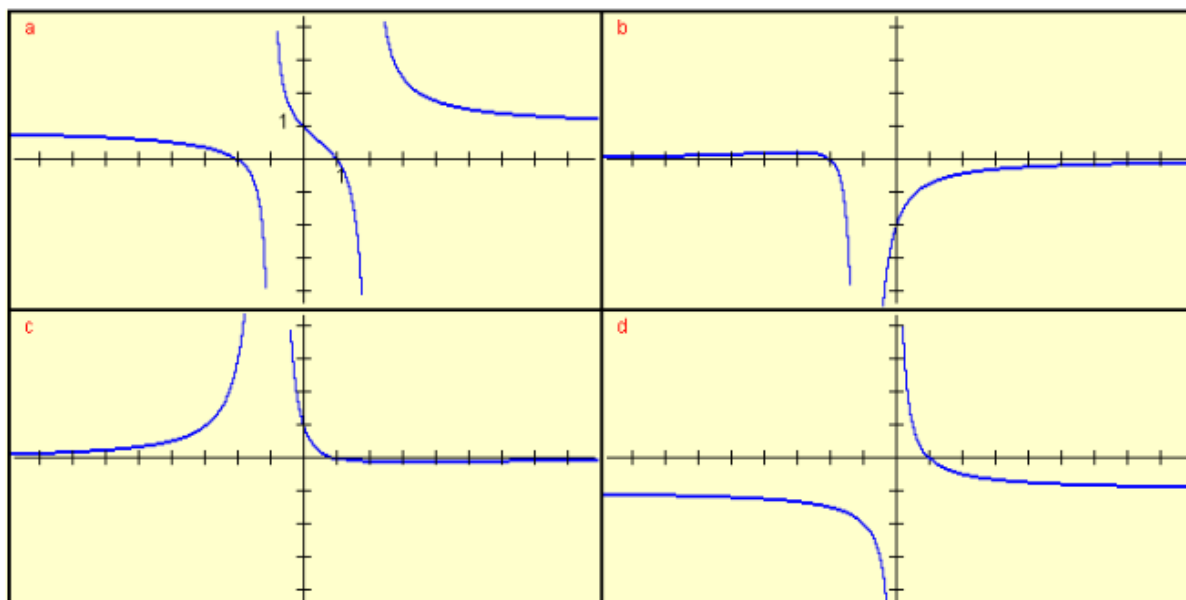
$$f(x) = (x - 1) / (x^2 + x + 1)$$



6

Identify the graph of the rational function f .

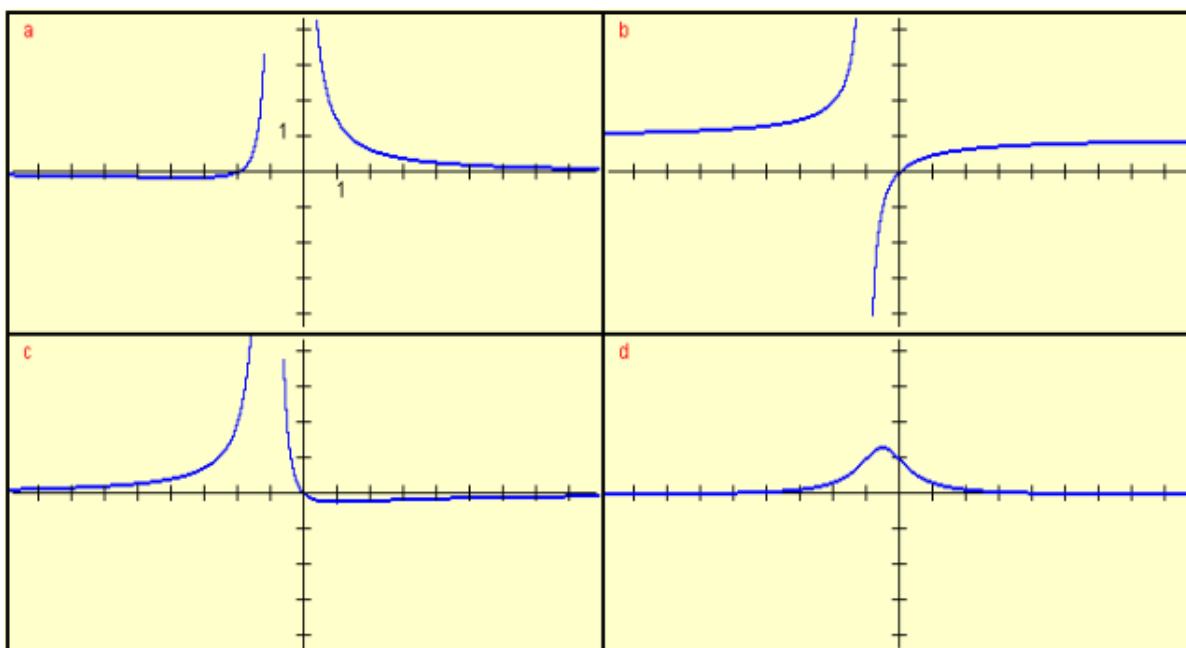
$$f(x) = (x^2 + x - 2) / (x^2 - x - 2)$$



7

Identify the possible graph of the rational function f given by

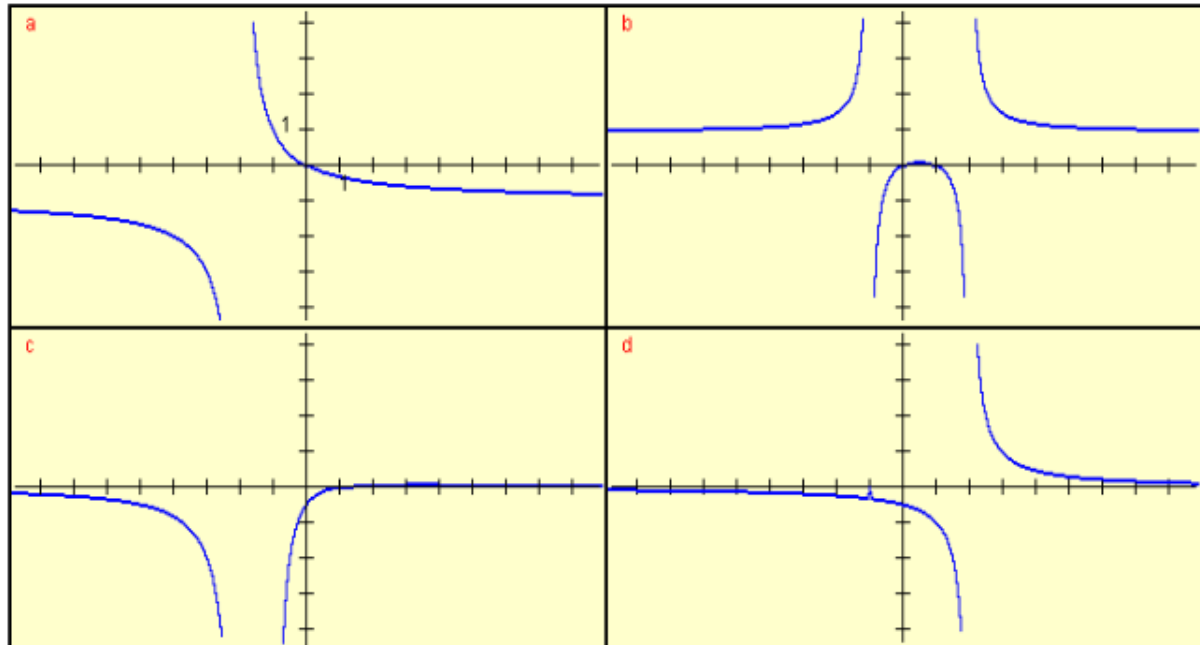
$$f(x) = 1 / (x^2 + x + 1)$$



8

Identify the possible graph of the rational function f given by

$$f(x) = (x^2 - x) / (x^2 - x - 2)$$



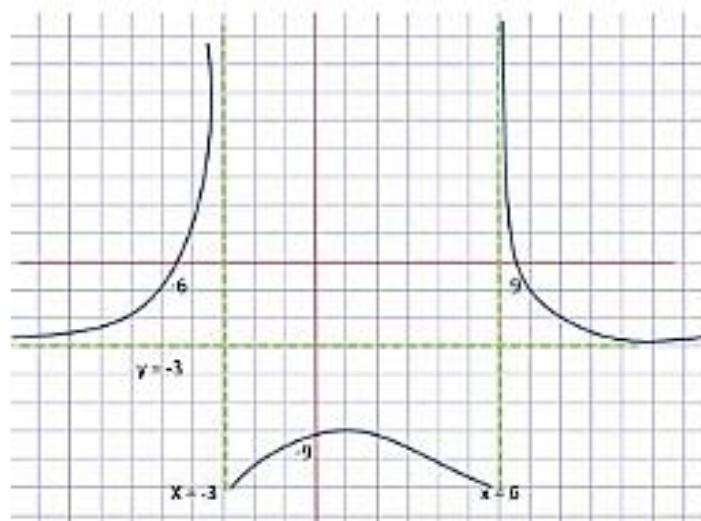
9

Create a function with the following properties:

- It has a horizontal asymptote at $y = 2$.
- It has a discontinuity at $x = 2$ which is not a vertical asymptote.
- It has no other discontinuities or asymptotes.

10

Find the possible formula for the function in the figure below.



11

Consider $f(x) = \frac{2x^2-8}{x^2-5x-6}$

- (a) Find the domain for this function.
- (b) Find the x - and y-intercepts.
- (c) Find the horizontal and vertical asymptotes.

12

Consider the following.

$$g(x) = \frac{x^2-x-6}{x^2-16}$$

- (a) State the domain of the function.
- (b) Identify all intercepts.
- (c) Find any vertical and horizontal asymptotes.

13

Find the domain and all asymptotes of the following function:

$$y = \frac{x^2 - x - 2}{x - 2}$$