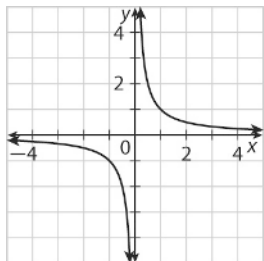


LESSON
8-1

Graphing Simple Rational Functions

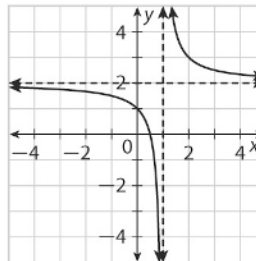
Reteach

Graph of $y = \frac{1}{x}$



Vertical Asymptote: $x = 0$
Horizontal Asymptote: $y = 0$

Graph of $y = \frac{1}{x-1} + 2$



Vertical Asymptote: $x = 1$
Horizontal Asymptote: $y = 2$

Identify the horizontal and vertical asymptotes of the function.

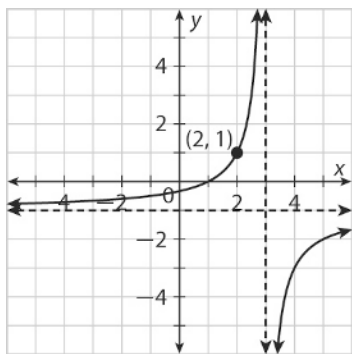
1. $y = \frac{2}{x-5} - 3$

2. $y = \frac{5}{x+3} - 1$

3. $y = \frac{-2}{x-4} + 6$

4. $y = \frac{-1}{x} + 7$

Example Write the function in the form $f(x) = \frac{a}{x-h} + k$ by using its graph.



1. Find asymptotes from the graph.

$x = 3$

$y = -1$

2. Plug in h and k .

$f(x) = \frac{a}{x-3} - 1$

3. Plug in the given point for x and y .

$1 = \frac{a}{2-3} - 1$

$2 = \frac{a}{-1}$

4. Solve for a .

$-2 = a$

5. Write the function.

$f(x) = \frac{-2}{x-3} - 1$

Write the functions in the form $f(x) = \frac{a}{x-h} + k$ by using the graph.

