

Sophi Nelson

17.  $y = \frac{3}{x+2}$       VA:  $x = -2$   
Hole: none

Instead of graphing the problem on a graph, there is an easier way to find the vertical asymptotes and holes.

To find a hole, there have to be two factors that cancel. For example:

$$y = \frac{\boxed{(x+5)}}{(x+4)\boxed{(x+5)}} \quad \leftarrow \text{These two cancel out, making the hole at } x = -5$$

The vertical asymptote is when there are no factors that cancel out and there is one left over in the denominator. For example:

$$y = \frac{3}{\boxed{x+2}}$$

$\nwarrow$  the  $x+2$  is the only factor in the denominator, making the VA at  $x = -2$ . To find the VA,  $x$  has to equal 0;  $(x+2) = 0$

$$-2 \quad \boxed{x = -2}$$

I believe I'm right because  $x+2$  is in the denominator and there are no factors that cancel out.

JP  
Sara