MCR 3UI   Graphs of Rational Functions

Determine any Vertical Asymptotes or Holes for the following functions.
Graph each function.

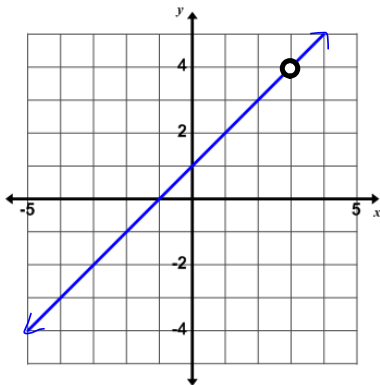$$a(x) = \frac{x^2 - 2x - 3}{x - 3} \qquad b(x) = \frac{x^2 + 2x}{x^3 - 4x} \qquad c(x) = \frac{x^3 - x^2 + 2x - 2}{x - 1}$$
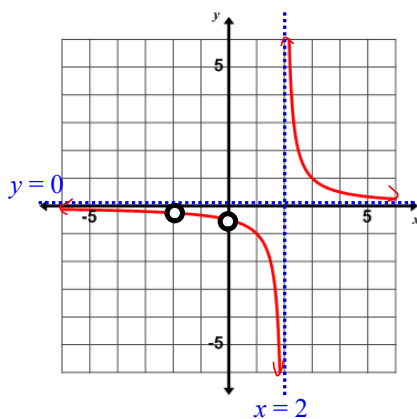
Simplifies to:

$$a(x) = x + 1 \qquad\qquad b(x) = \frac{1}{x - 2} \qquad\qquad c(x) = x^2 + 2$$
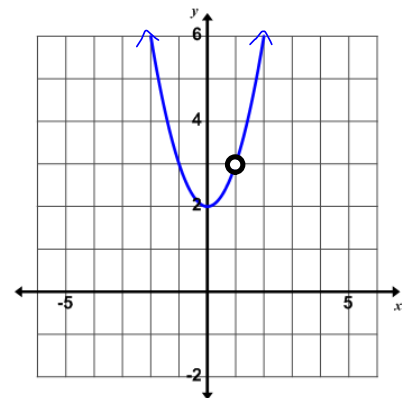

The restriction is that $x \neq 3$.
there is hole at $x = 3$.

The restrictions are: $x \neq -2, 0, 2$.
there are holes at $x = -2$ and 0.
there is vertical asymptote at $x = 2$.

The restriction is that $x \neq 1$.
there is hole at $x = 1$.