

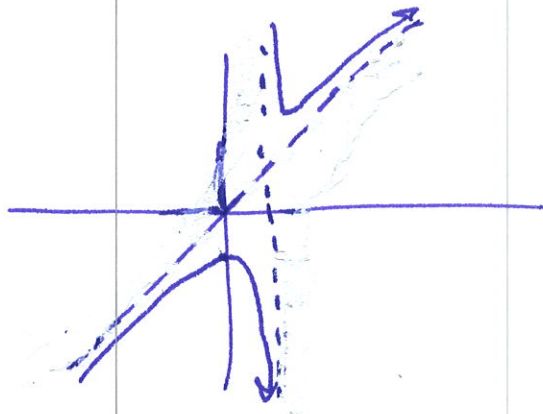
Instructions: Show all work. Give exact answers unless specifically asked to round.

1. Find any vertical, horizontal or slant/oblique asymptotes, and any holes, and use them to graph the functions.

a. $f(x) = \frac{x^2 - x + 1}{x - 1}$

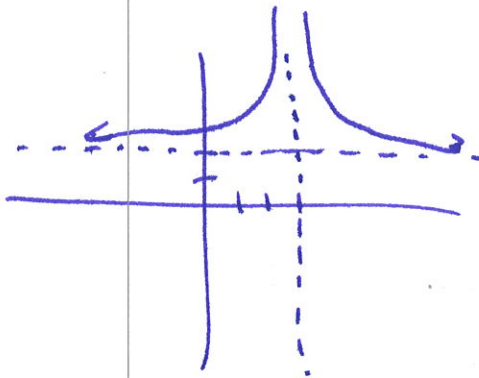
$$\begin{array}{r} x \\ x-1 \overline{) x^2 - x + 1} \\ \underline{-x^2 + x} \\ x + 1 \end{array}$$

$$x + \frac{1}{x-1}$$



vertical $x=1$
oblique $y=x$
no holes

b. $f(x) = \frac{1}{(x-3)^2} + 2$



vertical $x=3$
horizontal $y=2$