

Topic 24: Graph rational functions

Sketch the graph of each function and label all intercepts and asymptotes.

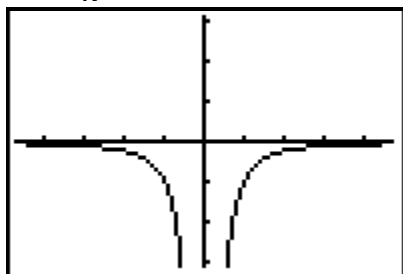
1. $f(x) = -\frac{1}{x^2}$

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

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

Answers.

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

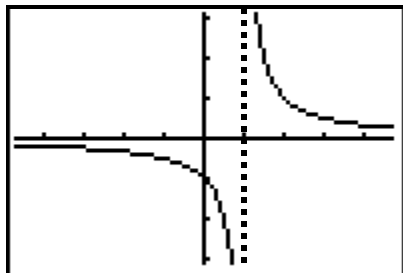


Vertical asymptote: $x=0$

Horizontal asymptote: $y=0$

No intercepts.

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

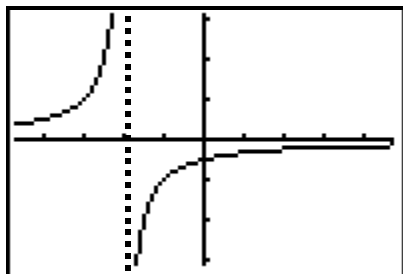


Vertical asymptote: $x=1$

Horizontal asymptote: $y=0$

y-intercept: $(0,-1)$

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



Vertical asymptote: $x=-2$

Horizontal asymptote: $y=0$

y-intercept: $(0,-1/2)$