

Graphing Simple Rational Functions

Identify the vertical asymptotes, horizontal asymptote, domain, and range of each.

1) $f(x) = -\frac{4}{x}$

2) $f(x) = \frac{4}{x-1} + 1$

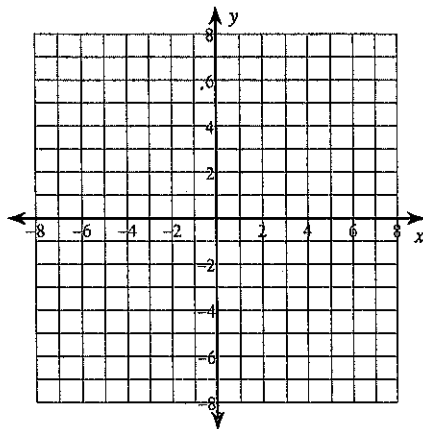
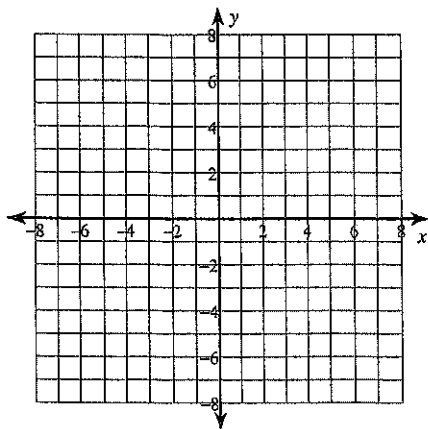
3) $f(x) = -\frac{3}{x-1} - 1$

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

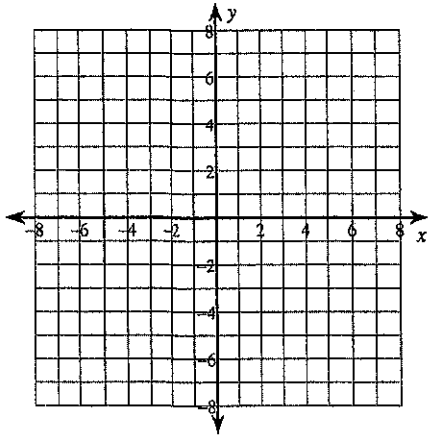
Identify the vertical asymptotes, horizontal asymptote, domain, and range of each. Then sketch the graph.

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

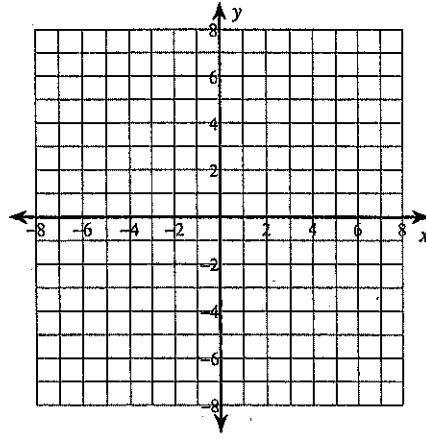
6) $f(x) = \frac{3}{x+1} + 2$



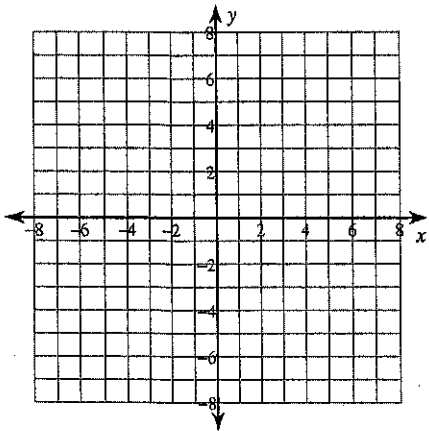
7) $f(x) = \frac{3}{x} + 1$



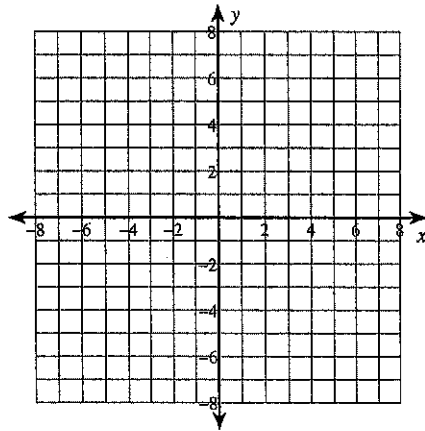
8) $f(x) = \frac{2}{x-3} + 1$



9) $f(x) = -\frac{4}{x+1} + 1$



10) $f(x) = \frac{4}{x} + 2$



Critical thinking question:

11) Write a function of the form $f(x) = \frac{a}{x-h} + k$ with a vertical asymptote at $x = 25$