

**GRAPHING SIMPLE RATIONAL FUNCTIONS**

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

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

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

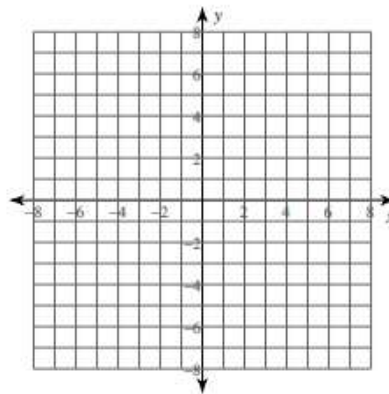
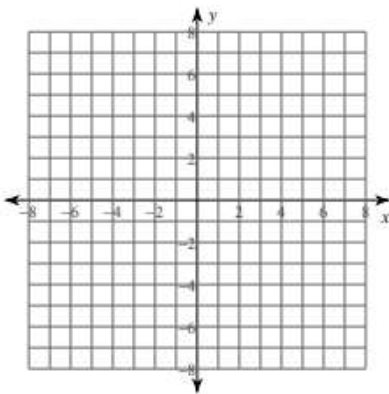
3)  $f(x) = -\frac{3}{x-1} - 1$

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

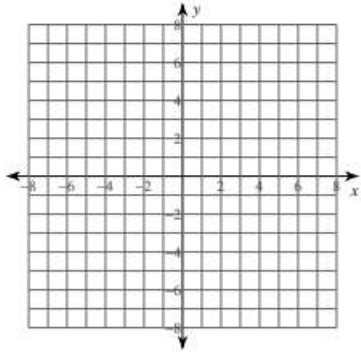


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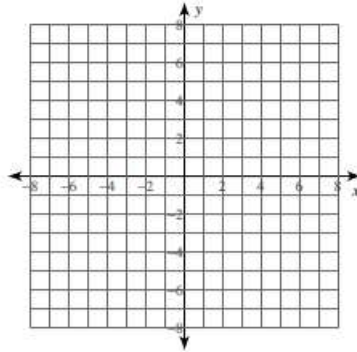
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Identify the vertical asymptotes, horizontal asymptote, domain, and range of each. Then sketch the graph.

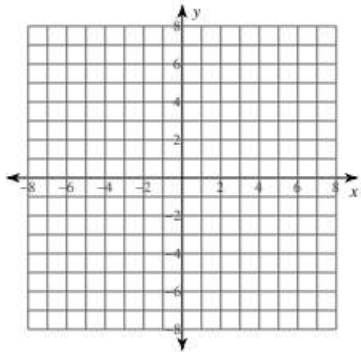
7)  $f(x) = \frac{3}{x} + 1$



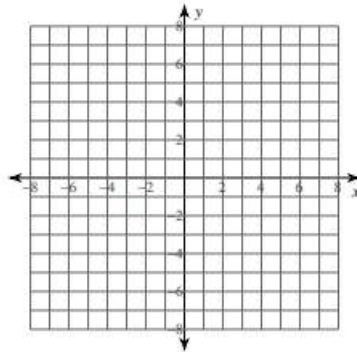
8)  $f(x) = \frac{2}{x-3} + 1$



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  $x = 25$