## AP Algebra 2

Name: $\qquad$

## Practice Rational Transformations

Given the following rational functions, state the transformations, asymptotes, and domain and range for each.

1. $y=4\left(\frac{1}{x}\right)+3$

Transformations:

VA:
HA:
Domain:
Range:
2. $y=\frac{1}{x+2}$

Transformations:
VA:
Domain:
HA:
Range:
3. $y=\frac{-6}{(x-1)^{2}}-4$

Transformations:
VA: HA:
Domain:
Range:
4. $y=2\left(\frac{1}{x^{2}}\right)+3$

Transformations:

VA:

Domain:

HA:
Range:

Graph the given rational functions.
5. $y=\frac{1}{x}-2$
6. $y=\frac{1}{(x+3)^{2}}$
7. $y=-\frac{1}{x-4}$




Given the graph of $f(x)=\frac{1}{x-1}+3$ below, sketch the requested graphs.

8. $-f(x-2)$


9. $f(x+7)+1$
10. $f(-x)-2$

11. Given $f(x)=\frac{1}{x}$, write the equation of the function that transforms $f(x)$ by reflecting it over the $x$-axis, vertically stretches by a factor of 5 , shifts left 9 , and down 2 .
12. Given $f(x)=\frac{1}{x^{2}}$, write the equation of the function that transforms $f(x)$ by reflecting it over the $y$-axis, shifts right 3 , and up 4.

