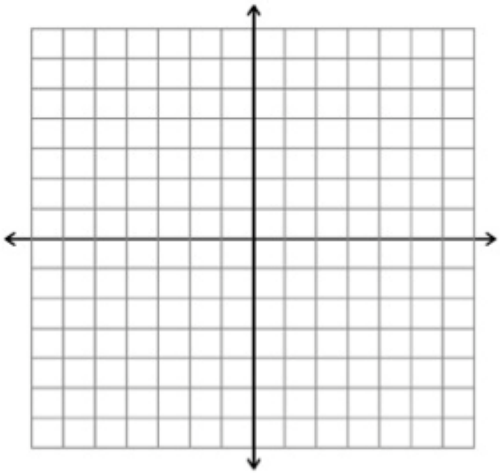
Secondary III
7-1 HW Rational Functions

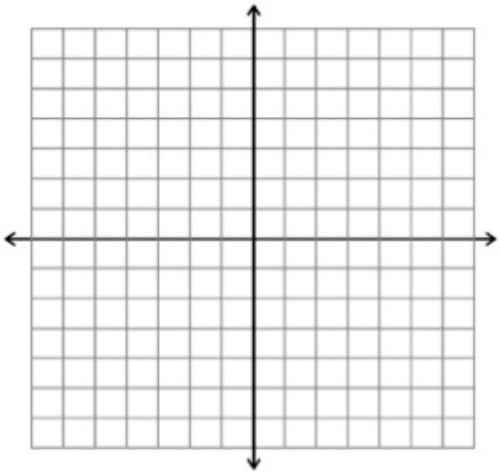
Name: _____
Period:_____

Graph the Following functions:

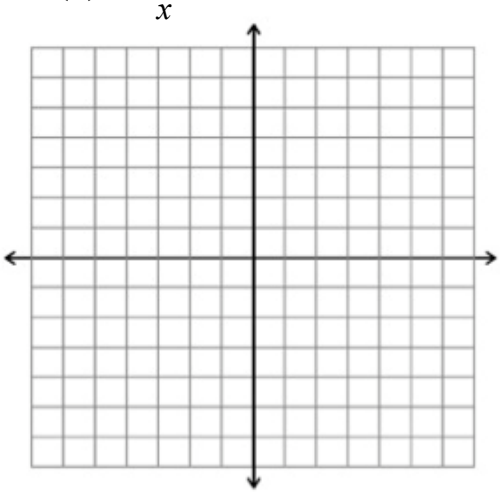
1. $f(x) = \frac{1}{x+2}$



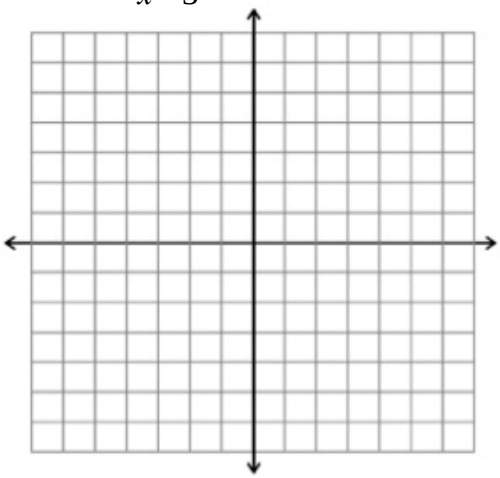
2. $g(x) = \frac{1}{x^2} + 2$



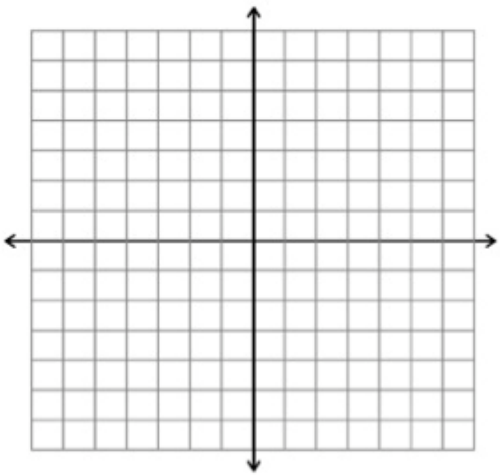
3. $h(x) = -\frac{1}{x}$



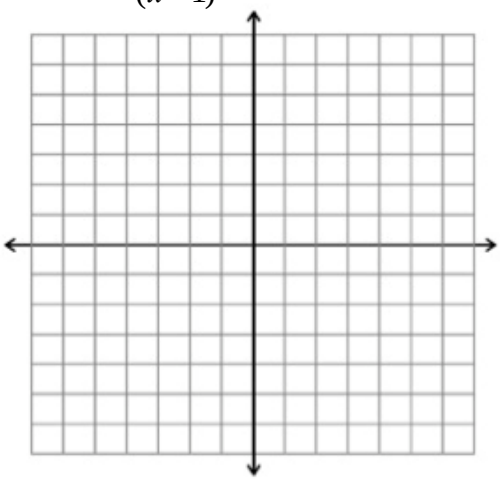
4. $p(x) = \frac{1}{x-3} + 2$



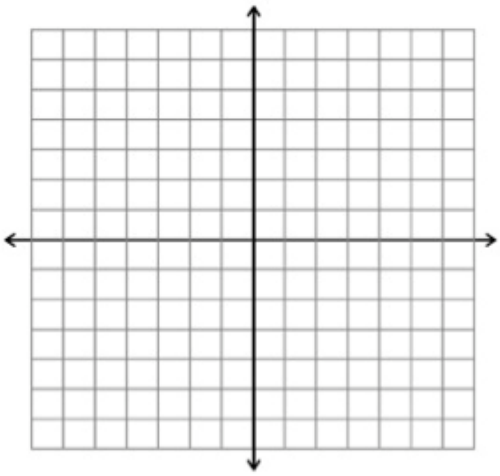
5. $k(x) = -\frac{1}{x^2}$



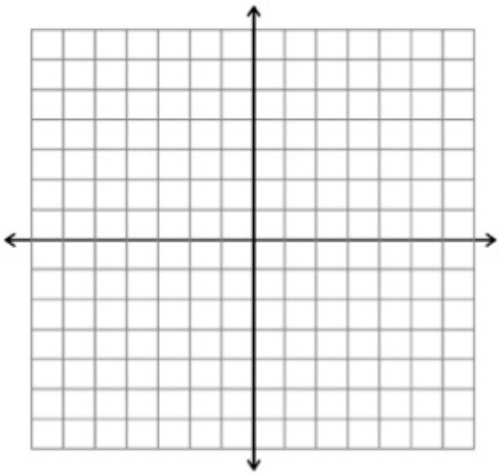
6. $f(x) = \frac{1}{(x+1)^2} - 3$



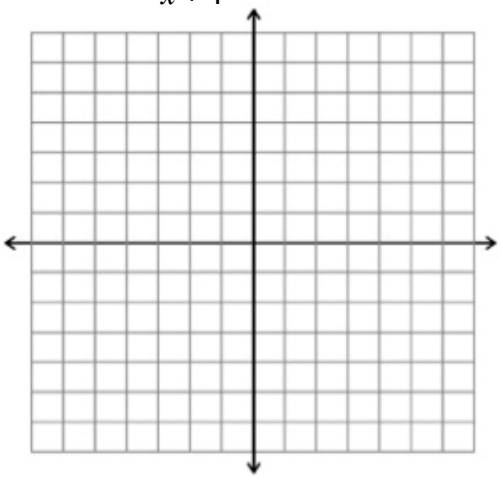
7. $f(x) = -\frac{1}{x^2} - 2$



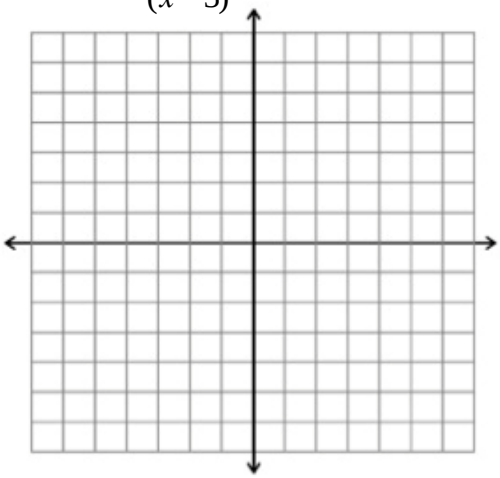
8. $p(x) = \frac{1}{x - 3} + 4$



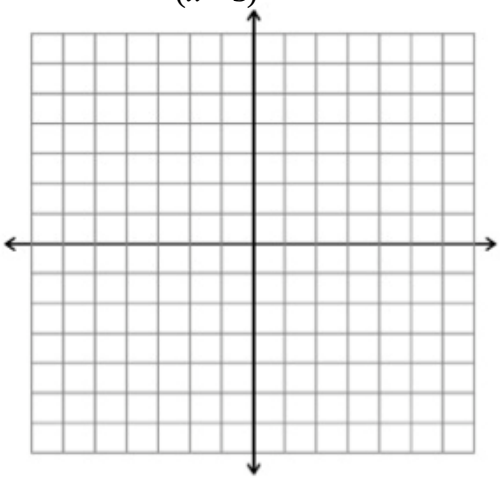
9. $f(x) = -\frac{1}{x + 4}$



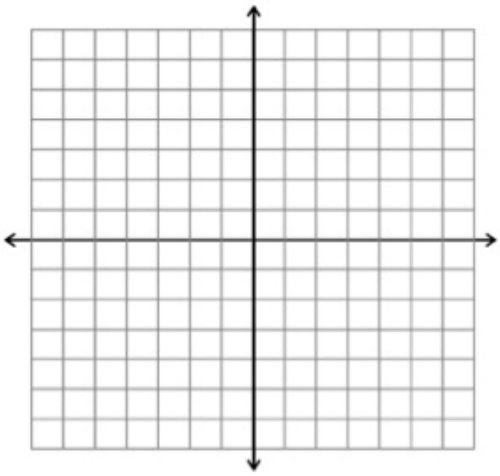
10. $g(x) = \frac{1}{(x - 3)^2} - 5$



11. $k(x) = -\frac{1}{(x + 3)^2} + 6$

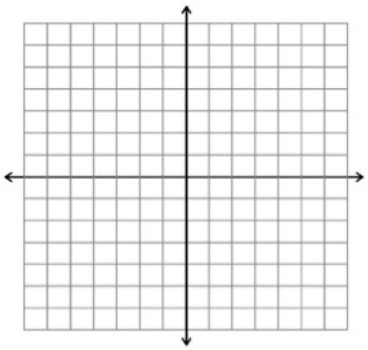


12. $f(x) = -\frac{1}{x + 2} - 3$

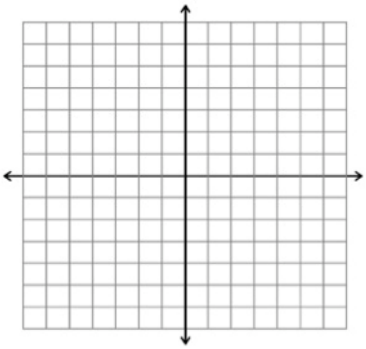


Rewrite the function in the form f(x) = q(x) + $\frac{r(x)}{d(x)}$, then write the transformations from its parent function and sketch a complete graph of f(x).

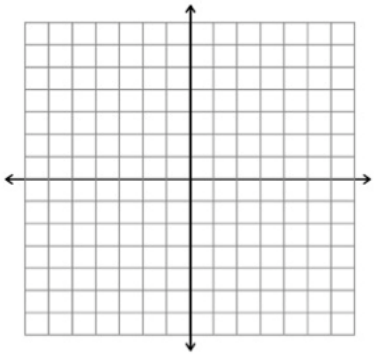
13. f(x) = $\frac{3x+1}{x-2}$



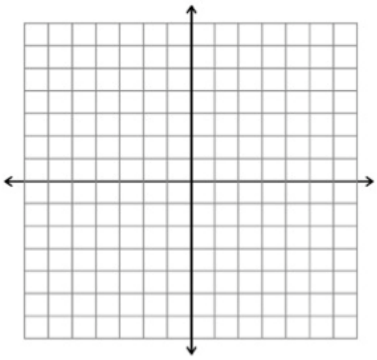
14. g(x) = $\frac{x+2}{x-1}$



15. h(x) = $\frac{x-1}{x+1}$

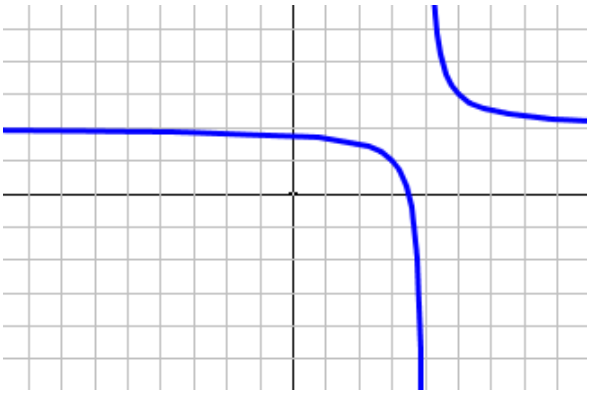


16. j(x) = $\frac{3x+6}{2x-4}$



Give the function and analyze the following graphs:

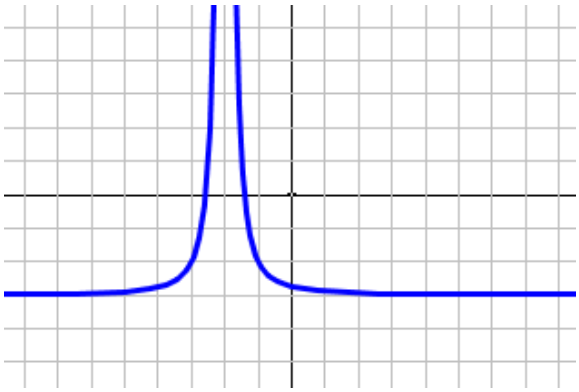
17. f(x)=



Domain:
Range:
V Asymptote:
H Asymptote:
increasing:
decreasing:
End Behavior:

Asymptote behavior:

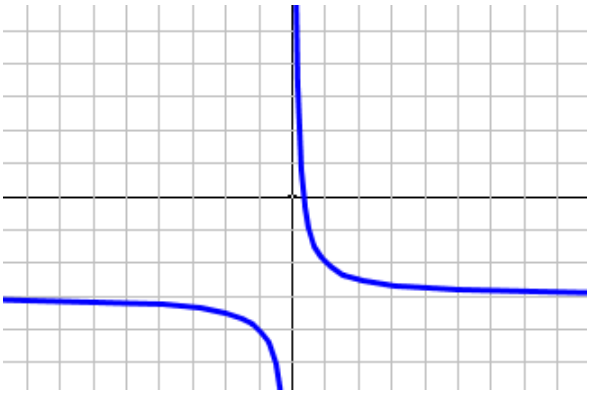
18. g(x)=



Domain:
Range:
V Asymptote:
H Asymptote:
increasing:
decreasing:
End Behavior:

Asymptote behavior:

19. h(x)=



Domain:
Range:
V Asymptote:
H Asymptote:
increasing:
decreasing:
End Behavior:

Asymptote behavior:

Review

Simplify the following rational expressions

1. $\frac{x^2-4}{2x^3} \bullet \frac{4x}{x^2-5x+6}$

2. $\frac{x^2+4x-12}{x^3-4x} \bullet \frac{3x-6}{x^2+x-2}$