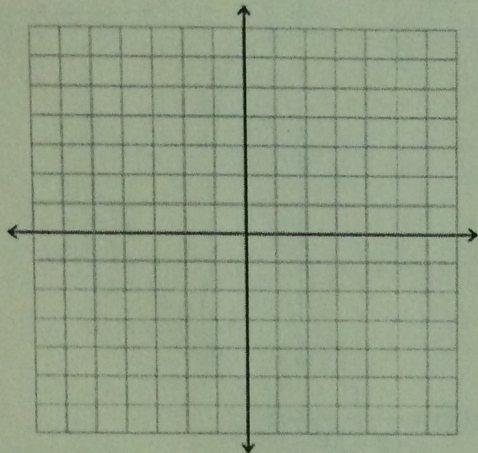
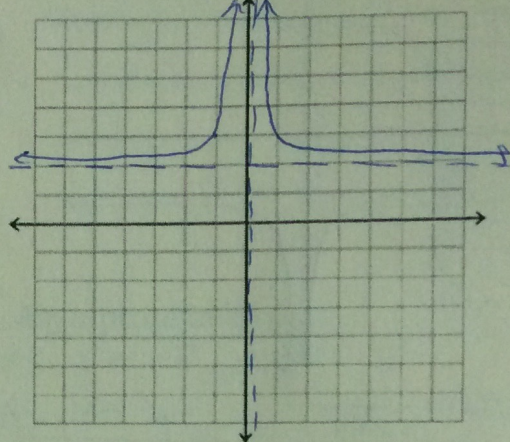


Graph the Following functions:

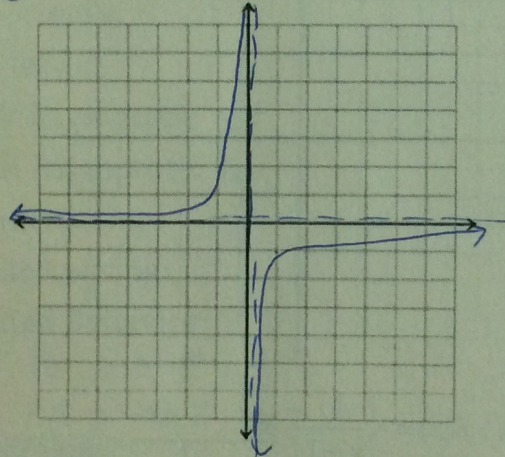
1. $f(x) = \frac{1}{x+2}$



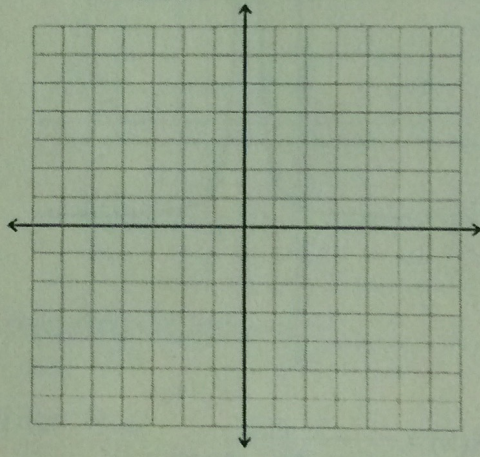
2. $g(x) = \frac{1}{x^2} + 2$ *Volcano!* *Shift up 2*



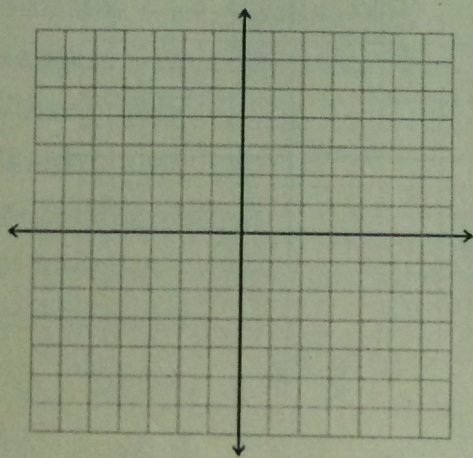
3. $h(x) = -\frac{1}{x}$ *Flip*



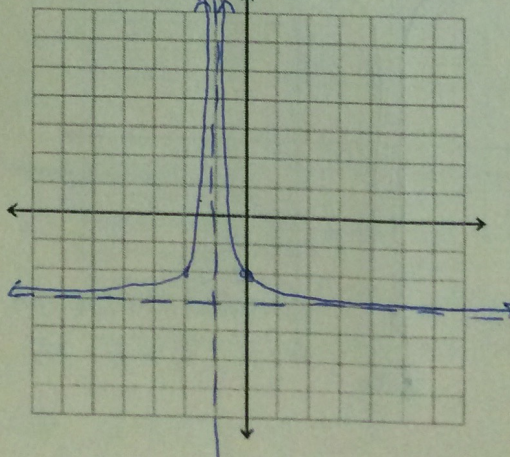
4. $p(x) = \frac{1}{x-3} + 2$



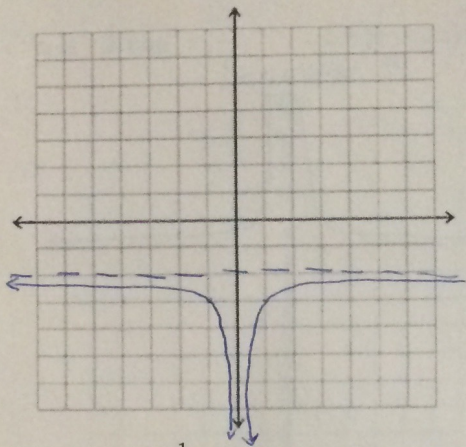
5. $k(x) = -\frac{1}{x^2}$



6. $f(x) = \frac{1}{(x+1)^2} - 3$ *Volcano* *Shift Left 1* *Shift Down 3*

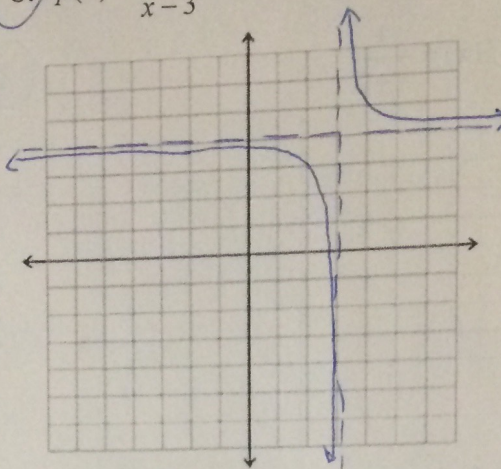


7. $f(x) = -\frac{1}{x} - 2$
volcano
 V. Flip
 Shift $\downarrow 2$

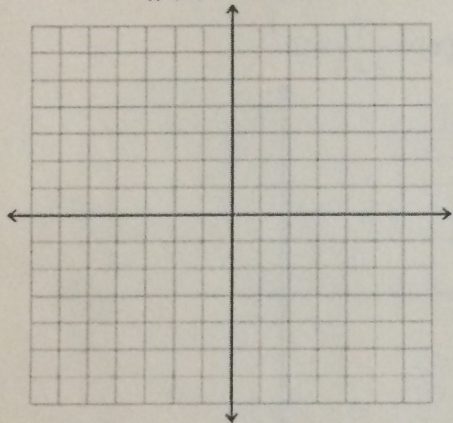


8. $p(x) = \frac{1}{x-3} + 4$

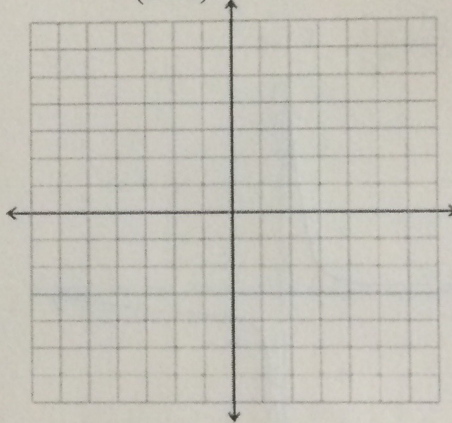
Shift $\rightarrow 3 \uparrow 4$



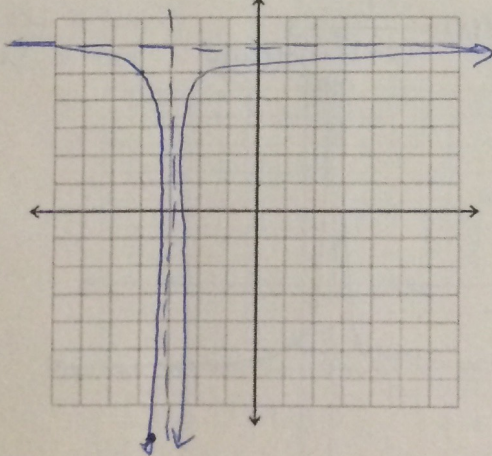
9. $f(x) = -\frac{1}{x+4}$



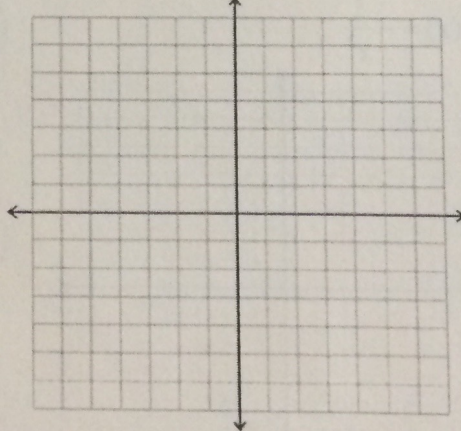
10. $g(x) = \frac{1}{(x-3)^2} - 5$



11. $k(x) = -\frac{1}{(x+3)^2} + 6$
volcano
 V. Flip
 Shift $\leftarrow 3 \uparrow 6$



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



Give the function and analyze the following graphs:

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

Domain: $(-\infty, 4) \cup (4, \infty)$

Range: $(-\infty, 2) \cup (2, \infty)$

V Asymptote: $x = 4$

H Asymptote: $y = 2$

increasing: None

decreasing: $(-\infty, 4) \cup (4, \infty)$

End Behavior:

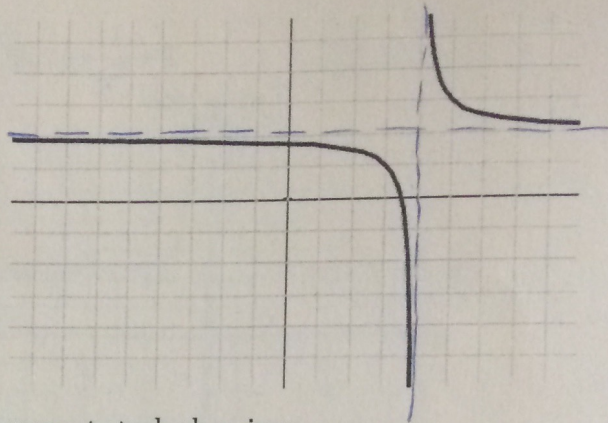
As $x \rightarrow -\infty, y \rightarrow 2$

As $x \rightarrow +\infty, y \rightarrow 2$

V. Asymptote behavior:

As $x \rightarrow 4^-, y \rightarrow -\infty$

As $x \rightarrow 4^+, y \rightarrow +\infty$



x's,
left to
right

14. $g(x) =$

Hints:

Domain:

Range:

V Asymptote: $x =$

H Asymptote: $y =$

increasing:

decreasing:

End Behavior:

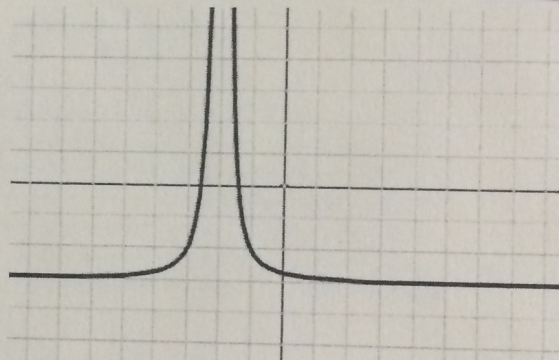
Left: As $x \rightarrow -\infty, y \rightarrow$

Right: As $x \rightarrow +\infty, y \rightarrow$

V. Asymptote behavior:

As $x \rightarrow$, $y \rightarrow$

As $x \rightarrow$, $y \rightarrow$



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

Domain: $(-\infty, 0) \cup (0, \infty)$

Range: $(-\infty, -3) \cup (-3, \infty)$

V Asymptote: $x = 0$

H Asymptote: $y = -3$

increasing: None

decreasing: $(-\infty, 0) \cup (0, \infty)$

End Behavior:

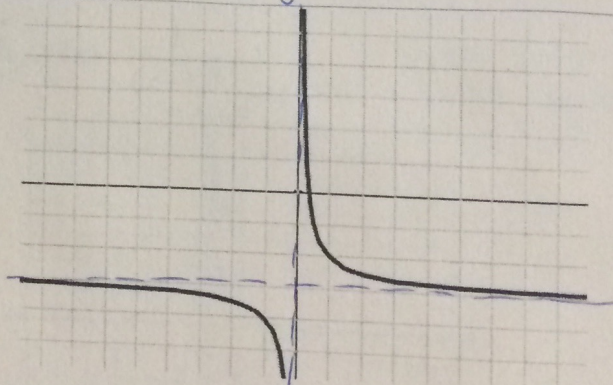
As $x \rightarrow -\infty, y \rightarrow -3$

As $x \rightarrow +\infty, y \rightarrow -3$

Asymptote behavior:

As $x \rightarrow 0^-, y \rightarrow -\infty$

As $x \rightarrow 0^+, y \rightarrow +\infty$



x's,
L → R