Name\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Algebra Bootcamp for Limits!**

Analysis for Rational Functions

**Directions:** Perform a complete analysis of the following rational functions. This includes finding holes,
all asymptotes, all intercepts, the domain, and performing a sign analysis. Then you should conclude
by drawing a sketch of the functions.

Please do all your work on a separate sheet paper. Please complete graphs on graph paper.
(If you would like graph paper, please see me.)

|  |  |  |  |
| --- | --- | --- | --- |
|  | $$y=\frac{x^{2}}{x^{2}-x-2}$$ |  | $y=\frac{x-1}{x^{2}-x-6}$  |
|  | $$y=\frac{2x^{4}}{x^{4}+1}$$ |  | $$y=\frac{4}{(x+2)^{2}}$$ |
|  | $y=\frac{x^{2}}{x^{2}-9}$  |  | $$y=\frac{\left(x+2\right)(x+3)^{2}}{x^{2}-9}$$ |
|  |   |  |  |