**GSE Algebra 2 Unit 4: Rational and Radical Relationships**

**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Unit: 4B** | **Homework**: **4** |
| **Standard**:**Interpret functions that arise in applications in terms of the context*** **MCC9**-**12.F.IF.4** For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; and end behavior. *(Limit to radical and rational functions.)*

**Analyze functions using different representations*** **MCC9**-**12.F.IF.7d (+)** Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.
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| **Essential Question:** What are the characteristics of the graph of a rational function and what is the significance of each characteristic?  |
| **Key Words**: Asymptote, degree, factor, factoring, horizontal asymptote, rational function, vertical asymptote, zero |
| **Recommended Resources:**1. http://www.walch.com/rr/00207
2. http://www.walch.com/rr/00208
3. http://www.walch.com/rr/00209
4. http://www.walch.com/rr/00210
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| Sketch the graph of the given rational function on a coordinate plane. State the asymptotes and zeros, if any. State the end behavior. |
| 1. $f\left(x\right)= \frac{x+2}{x-1}$
 | 1. $f\left(x\right)= \frac{x+1}{x+3}$
 |
| 1. $f\left(x\right)= \frac{2}{x-3}$
 | 1. $f\left(x\right)= \frac{4}{x+2}$
 |
| 1. $f\left(x\right)= \frac{3x-1}{x-4}$
 | 1. $f\left(x\right)= \frac{5x+3}{x+1}$
 |
| 1. $f\left(x\right)= \frac{3x+1}{4x-2}$
 | 1. $f\left(x\right)= \frac{3x+1}{2x-2}$
 |
| 1. $f\left(x\right)= \frac{x+2}{2x+3}$
 | 1. $f\left(x\right)= \frac{5x+2}{2x-1}$
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