**8.2 Reciprocal Function Family**.  
Objective: To graph reciprocal functions  
To graph translations of reciprocal functions

**Rational Function**:; where p(x) and q(x) are polynomials and q(x) ≠ 0

**Hyperbola Equation**:

x = h

y = k

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Asymptotes: Vertical Asymptote: x = h

Horizontal Asymptote: y = k

Domain: all real numbers except x = h

Range: all real numbers except y = k

**Graphing a Hyperbola**:

1) Identify and graph the vertical and horizontal asymptotes

(h and k)

2) Make t-charts using “smart” x values for both sides of vertical asymptote

3) Plot points and draw branches

*Example:*

*Identify the horizontal and vertical asymptotes of the graph of the function. Then state the domain and range.*

*1)  2) *

*3)  4)*

*Graph each function, then state the domain and range.*

*a) *

*b) *

*c) *

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