
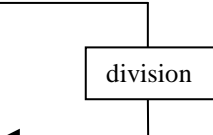


- determine key features of the graphs of Rational Functions using algebraic analysis
- sketch graphs of Rational Functions by interpreting the results of algebraic analysis
- sketch the Absolute Value of a Rational Function
- sketch the "Reciprocal of a Function"

Topic	I have reviewed it.	I have done questions.
Using Mr. One		
Solving rational equations (state restrictions first!)		
Determining limits to infinity i.e. $\lim_{x \rightarrow \infty} \frac{\text{constant number}}{\text{polynomial}} = 0$		
<b>Graphing Rational Functions (Essay style)</b>		
(a) Determine symmetry (replace $x$ with $-x$ , then $y$ with $-y$ )		
(b) Determine $x$ - and $y$ -intercepts		
(c) State Restrictions (can't divide by zero)		
(d) Determine Vertical Asymptote(s) (via restrictions) & test their behaviour using one-sided limits  Ex. For the behaviour of the vertical asymptote $x = 4$ :  $\lim_{x \rightarrow 4^+} f(x) = \infty$ $\lim_{x \rightarrow 4^-} f(x) = -\infty$  $f(4.001) = 3599$ $f(3.999) = -5999$		
(e)(i) Determine the Horizontal Asymptote:  $\lim_{x \rightarrow \infty} f(x)$ $= C$ $\therefore \text{the horizontal asymptote is } y = C$ & test its behaviour using $f(100) / f(-100)$ test		
OR (ii) Determine the Slant Asymptote:  $\lim_{x \rightarrow \infty} f(x)$ $= \lim_{x \rightarrow \infty} ax + b + \frac{\text{constant number}}{\text{polynomial}}$  $\therefore \text{the slant asymptote is } y = ax + b$ & test behaviour its using $f(100) / f(-100)$ test		
(f) Other Information Ex. $f(6) = 3, f(-2) = -3$		
(g) State the Domain and Range		
"Puzzle Graph" - create a graph given information only		
"Hole" in the graph - always try to factor and reduce a rational function first to check for holes		
Graphing the "Absolute Value of a Rational Function" consider the non-absolute value, graph, then reflect everything below the $x$ -axis in the $x$ -axis.		
Graph the "Reciprocal of a Function", $y = \frac{1}{f(x)}$  consider $y = f(x)$ and key $y$ values:  when $y = 0$ , $y = \pm 1$ , $y > 1 / y < -1$ , $0 < y < 1 / -1 < y < 0$		