Rational Functions

$\frac{\text{Polynomial}}{\text{Polynomial}}$

Step 1: FACTOR

Step 2: Look for any factors that cancel → If a factor cancels out, it creates a _____ _____ or _____ → x-coordinate: _____ y-coordinate: _____ → After this point, just use the _____ _____

Step 3: Find the vertical asymptote(s) → Set the *bottom* of the fraction = 0

Step 4: Find the horizontal asymptote → *Bottom heavy degree*: y = 0 → *Equal degree*: y = LC/LC → *Top heavy degree*: No HA, maybe slant → Top *1 higher degree* than bottom: SA, divide, ignore r

Step 5: Find the x-intercept(s) → Set the *top* of the fraction = 0

Step 6: Find the y-intercept → Plug in 0 for x