Graphing Rational Functions

$$g(x) = \frac{x-1}{x^2 + 4x + 4}$$

Find Vertical Asymptote

Set <u>denominator</u> equal to 0

SOLVE

EX: $x^2+2x-3=0$

$(x+3)(x-1)=0$

X=-3 and x=1

Find Horizontal Asymptote

Look at degree of denominator and numerator

EX: higher exp is on bottom, y=0

If higher degree is on top, no horizontal asymptote

If degree is the same, divide leading coefficients

If higher degree is on bottom, horizontal asymptote = 0

Plot vertical and horizontal asymptotes with dotted lines

Graph on Calculator