

RATIONAL Functions

Write the following notes on the left hand side of notebook

EQUATION FORM:

$$f(x) = \frac{p(x)}{q(x)}$$

X-INTERCEPTS:

Set the numerator ($p(x)$) equal to zero.

VERTICAL ASYMPTOTES:

Set the denominator ($q(x)$) equal to zero.

HORIZONTAL ASYMPTOTES:

- If degree of $p >$ degree of q : no horiz. asymptote
- If degree of $p <$ degree of q : $y = 0$
- If degree of $p =$ degree of q : $y = \frac{\text{leading coeff } p(x)}{\text{leading coeff } q(x)}$

HOLES: (break in graph)

x-coord: Set common factor equal to zero
y-coord: substitute x-coord. into simplified function.

Write the following examples on right hand side with ample space between

EXAMPLES

$$f(x) = \frac{x+7}{x-2}$$

$$f(x) = \frac{x^2-9}{x+2}$$