x and y intercepts of Rational Functions:

Y-Intercepts: the result of replacing x with zero.

find the y-intercepts of each function.

1. $y = \frac{x^2 - 9x + 20}{x^2 + 7x + 10}$ y-int: $\frac{20}{10} = 2$

2. $y = \frac{x^2 - 4}{2x^2 + 6x}$ y-int: NONE

$2x(x+3)$

VA $-3, 0$

this ratio is undefined which means there is no y-int.

One of the VA is x=0 which is also why the graph doesn't cross the y-axis.

In general, the y-intercepts of a Rational Function is the:

Ratio of the Constants

A graph can have at most ONE y-intercept.

X-Intercepts: the result of replacing y with zero.

This means you are setting the ratio equal to zero and solving for x.

The only way a fraction equals zero is if the NUMERATOR equals zero.

find the x-intercepts of each function.

1. $y = \frac{x^2 - 9x + 20}{x^2 + 7x + 10} = \frac{(x-5)(x-4)}{}$

x-int: $5, 4$

2. $y = \frac{x^2 - 4}{2x^2 + 6x} = \frac{(x+2)(x-2)}{2x(x+3)}$

x-int: $+2, -2$

3. $y = \dfrac{x^2 + 7}{x^2 + 3x + 2}$

x-int: NONE

$x^2 + 7$ will never be zero which means that there are no x-intercepts

In general, the x-intercepts of a Rational Function are the:

Zeros of the numerator

A graph can have multiple x-intercepts.