

Finding the x and y intercepts of rational functions

To find the x - intercept $(x, 0)$

1. Set the numerator equal to 0

2. Solve for x.

To find the y - intercept $(0, y)$

1. Substitute 0 in for x

2. Simplify the expression

*Tip: it is the ratio of the constants (non x terms)

Examples:

Ex. 1

$$y = \frac{x^2 - x - 2}{x - 1}$$

x-int.
 $x^2 - x - 2 = 0$
 $(x - 2)(x + 1) = 0$
 $x - 2 = 0 \quad x + 1 = 0$
 $x = 2 \quad x = -1$

y-int
 $y = \frac{0^2 - 0 - 2}{0 - 1}$
 $y = \frac{-2}{-1} = 2$

Ex. 2

$$f(x) = \frac{3}{x - 2}$$

x-int
 $3 \neq 0$
none

y-int
 $y = \frac{3}{0 - 2} = -\frac{3}{2}$
 $(0, -3/2)$