

Reciprocal Linear Function - example

Main function:

$$y = mx + b$$

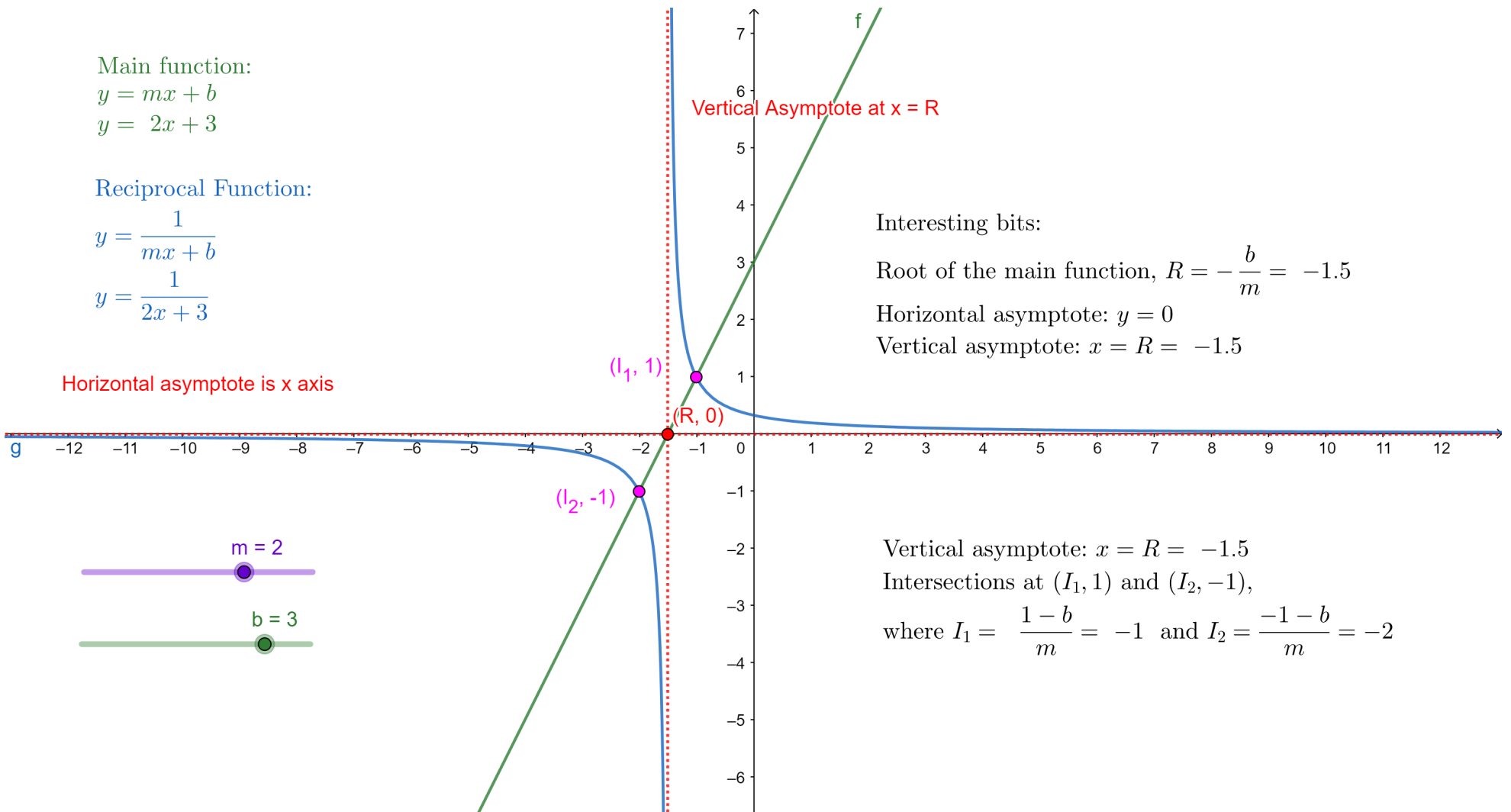
$$y = 2x + 3$$

Reciprocal Function:

$$y = \frac{1}{mx + b}$$

$$y = \frac{1}{2x + 3}$$

Horizontal asymptote is x axis



Interesting bits:

Root of the main function, $R = -\frac{b}{m} = -1.5$

Horizontal asymptote: $y = 0$

Vertical asymptote: $x = R = -1.5$

Vertical asymptote: $x = R = -1.5$

Intersections at $(I_1, 1)$ and $(I_2, -1)$,

where $I_1 = \frac{1 - b}{m} = -1$ and $I_2 = \frac{-1 - b}{m} = -2$