

Question # 12179

Write an equation for a rational function with: Vertical Asymptotes at $x = -3$ and $x = 5$ x-intercepts at $x = -5$ and $x = 4$ y-intercept at 7.

Solution. We are to find this function as $y(x) = a \frac{(x+5)(x-4)}{(x+3)(x-5)}$, where a is unknown constant. y-intercept is at 7, thus $y(0) = 7$, so $a = 21/4$.

Answer. $y(x) = 21/4 \cdot \frac{(x+5)(x-4)}{(x+3)(x-5)}$.