

$$f_1(x) = \frac{(x+1)}{(x-2)}$$

$$f_2(x) = \frac{\cancel{(x-2)} \cdot 1}{\cancel{(x-2)}(x-3)} = \frac{1}{x-3}$$

$(2, -1)$

$$f_3(x) = \frac{(x+1)}{(x+1)(x-2)}$$

$$f_4(x) = \frac{(x-3)}{(x+1)(x-2)}$$

$$f_5(x) = \frac{(x-2)(x-3)}{(x+1)(x-3)}$$

$$f_6(x) = \frac{(x-2)(x-3)(x+1)}{(x+1)(x-3)(x-2)}$$

$$f_7(x) = \frac{(x+1)(x-5)}{(x-2)}$$

$$f_8(x) = \frac{(x-2)^2(x-5)}{(\cancel{x-2})(x-3)}$$

$$\frac{(x-2)(x-5)}{(x-3)} = \underset{0}{(2, 0)}$$

$$f_9(x) = \frac{(x+1)(x+4)}{(x-1)(x+4)}$$

$$f_{10}(x) = \frac{2(x+5)^2(x-4)}{3(x+5)(x-4)^2}$$

$$f_{11}(x) = \frac{(x-7)^5 (x-3)^4}{(x-7)^4 (x-3)^2}$$

9
6

$$f_{12}(x) = \frac{(x-2) \cancel{(x-2)^2} (x-3)^3 \cancel{(x+1)}}{(x+1) \cancel{(x-3)^3} \cancel{(x-2)^1}} \quad \begin{matrix} n=6 \\ m=5 \end{matrix}$$

(2, 0)

Which functions have a hole at $x = -1$?

Which functions have a hole at $x = 2$?

Which functions have a hole at $x = 3$?

Which functions have a vertical asymptote at $x = -1$?

Which functions have a vertical asymptote at $x = 2$?

Which functions have a vertical asymptote at $x = 3$?

Which functions have an
 x – intercept at $x = -1$?

Which functions have an x – intercept at $x = 2$?

Which functions have an
 x – intercept at $x = 3$?

Which functions is a constant function with three holes?

Which function has a slant asymptote that is a linear function with a non-zero slope?

Which function has a slant asymptote that is a cubic function?

Which functions have the
end-behavior asymptote $y = 0$?

$$n < m$$

Which functions have the

end-behavior asymptote $y = \frac{a_n}{b_m} \neq 0$?

Which functions have a hole instead of an x – intercept on the x – axis?