

Rational Functions: Graphing Practice

Goal: Practice with the graphs of rational functions. Understand their horizontal asymptotes.

Graph the following rational functions. Make sure you are clear about multiplicity and classification (zero, hole, asymptote)

1.	$y = \frac{(x + 2)(x - 4)(x - 1)}{(x - 4)(x + 5)(x - 6)}$
2.	$y = \frac{-2(x + 5)(x + 4)(x - 4)}{(x - 1)(x - 4)(x + 5)}$

3.	$y = \frac{-2(x-1)(x-2)(x+2)}{x^2(x+1)^2}$
4.	$y = \frac{4x^3(x-3)}{x(x+1)(x+5)(x+4)}$
5.	$y = \frac{2(x-2)(x-4)(x+5)^3}{(x+1)(x-2)(x+1)(x-4)}$

6.

$$y = \frac{-4x(x+3)^2(x+2)}{(x+4)^2(x-1)(x+5)}$$

7.

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

8.

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

9.

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

10.

$$y = \frac{-2(x+3)(x+1)(x-4)^2}{(x-2)^2(x+4)}$$

11.

$$y = \frac{-(x+3)^2(x+5)^3}{(x+1)^4(x-4)}$$

Identify the characteristics of the following graphs and build an equation that would have those characteristics.



