Name

Rational Functions and Asymptotes - X Asymptote Types to Functions of Degree Top and Bottom

1 No horizontal or slant asymptote

Based on the order of the polynomials in the numerator and denominator, which function would have these horizontal or slant asymptotes?

A	B	C	D
$f(x)=\frac{3(x-1)}{x(x-3)}$	$f(x)=\frac{2(x+2)(x-1)(x-4)}{(x+1)}$	$f(x)=\frac{2(x+4)(x-1)(x-4)}{(x+3)(x+2)}$	$f(x)=\frac{2(x+4)x}{(x+2)(x-1)}$

2 Horizontal asymptote (not at zero)

Based on the order of the polynomials in the numerator and denominator, which function would have these horizontal or slant asymptotes?

A	B	C	D
$f(x)=\frac{2(x-2)}{(x+4)(x-1)}$	$f(x)=\frac{3(x-2)(x-3)(x-4)}{x}$	$f(x)=\frac{2(x+4)x(x-3)}{(x+3)(x-1)(x-4)}$	$f(x)=\frac{(x+1)(x-1)}{(x+4)}$

3 Horizontal asymptote (at zero)

Based on the order of the polynomials in the numerator and denominator, which function would have these horizontal or slant asymptotes?

A	B	C	D
$f(x)=\frac{3(x+3)(x-1)}{x}$	$f(x)=\frac{3x}{(x+3)(x-1)}$	$f(x)=\frac{(x+3)(x+2)(x+1)(x-2)}{(x+4)(x-3)}$	$f(x)=\frac{2x(x-1)(x-3)}{(x+3)(x+2)(x-2)}$

4 Slant asymptote

Based on the order of the polynomials in the numerator and denominator, which function would have these horizontal or slant asymptotes?

A	B
$f(x)=\frac{(x+2)(x+1)(x-1)}{(x+4)}$	$f(x)=\frac{(x-2)}{(x+4)}$
C	**D**
$f(x)=\frac{2(x+3)(x-2)}{(x-3)}$	$f(x)=\frac{2(x-4)}{(x+3)(x+2)}$