

Name: _____

Find all vertical asymptotes and horizontal asymptotes for $f(x) = \frac{12x^2+1}{3x^2-6x}$

Vertical Asymptotes: Reduce $f(x)$ to lowest terms

$$f(x) = \frac{12x^2+1}{3x(x-2)}$$

V.A. are zeros of denominator

$$\boxed{\text{V.A. } x=0, x=2}$$

Horizontal Asymptotes: Take ratio of leading terms

$$\text{as } x \rightarrow \pm\infty \quad f(x) \rightarrow \frac{12x^2}{3x^2} = 4$$

$$\boxed{\text{H.A. } y=4}$$