Name

Rational Functions and Asymptotes - Calculate Horizontal Asymptote (Expanded)

1

What is the horizontal asymptote of this rational function? $f(x) = \dfrac{3x + 6}{x^2 - 6x + 8}$

A Horizontal asymptote at $y = \frac{4}{3}$

B Horizontal asymptote at $y = \frac{2}{5}$

C Horizontal asymptote at $y = -2$

D Horizontal asymptote at $y = 0$

2

What is the horizontal asymptote of this rational function? $f(x) = \dfrac{3x^2 - 3x - 6}{3x^2 + 21x + 36}$

A Horizontal asymptote at $y = \frac{-8}{5}$

B Horizontal asymptote at $y = 0$

C Horizontal asymptote at $y = -2$

D Horizontal asymptote at $y = 1$

3

What is the horizontal asymptote of this rational function? $f(x) = \dfrac{3x}{x^2 - 5x + 4}$

A Horizontal asymptote at $y = -2$

B Horizontal asymptote at $y = 6$

C Horizontal asymptote at $y = 0$

D Horizontal asymptote at $y = \frac{8}{5}$

4

What is the horizontal asymptote of this rational function? $f(x) = \dfrac{-5x - 20}{4x + 12}$

A Horizontal asymptote at $y = \frac{-3}{5}$

B Horizontal asymptote at $y = -1$

C Horizontal asymptote at $y = \frac{-5}{4}$

D Horizontal asymptote at $y = 0$

5

What is the horizontal asymptote of this rational function? $f(x) = \dfrac{3x - 3}{x^3 - 2x^2 - 16x + 32}$

A Horizontal asymptote at $y = 3$

B Horizontal asymptote at $y = -4$

C Horizontal asymptote at $y = 0$

D Horizontal asymptote at $y = 6$

6

What is the horizontal asymptote of this rational function? $f(x) = \dfrac{-4x^2 + 16x - 12}{2x^2 + 6x}$

A Horizontal asymptote at $y = 0$

B Horizontal asymptote at $y = \frac{-8}{5}$

C Horizontal asymptote at $y = \frac{9}{5}$

D Horizontal asymptote at $y = -2$

7

What is the horizontal asymptote of this rational function? $f(x) = \dfrac{2x^2 + 6x - 8}{x^3 - 5x^2 + 6x}$

A Horizontal asymptote at $y = 2$

B Horizontal asymptote at $y = 0$

C Horizontal asymptote at $y = 4$

D Horizontal asymptote at $y = \frac{-5}{6}$

8

What is the horizontal asymptote of this rational function? $f(x) = \dfrac{-4x^2 + 28x - 48}{3x^2 + 6x - 24}$

A Horizontal asymptote at $y = 0$

B Horizontal asymptote at $y = 4$

C Horizontal asymptote at $y = \frac{-4}{3}$

D Horizontal asymptote at $y = \frac{-8}{3}$