



MAth on the Fly!



NAME: _____ DATE: _____

Vertical and Horizontal Asymptotes of Rational Functions

When possible, find the vertical and horizontal asymptotes of each function.

1. $f(x) = \frac{1}{x - 6}$

2. $f(x) = \frac{2x}{x + 7}$

3. $f(x) = \frac{x^2 + 3}{x - 10}$

4. $f(x) = \frac{x + 1}{x^2 + 3x - 10}$

5. $f(x) = \frac{-x^2 + 4x}{x^2 + 8x + 16}$

6. $f(x) = \frac{x^3 - 2}{x^2 - 8x - 9}$

7. $f(x) = \frac{-7x + 5}{x^2 - 9}$

8. $f(x) = \frac{2x^2 - 4}{6x^2 - 3x}$

SOLUTIONS

1. VA: $x = 6$
HA: $y = 0$

2. VA: $x = -7$
HA: $y = 2$

3. VA: $x = 10$
HA: None

4. VA: $x = -5, x = 2$
HA: $y = 0$

5. VA: $x = -4$
HA: $y = -1$

6. VA: $x = -1, x = 9$
HA: None

7. VA: $x = -3, x = 3$
HA: $y = 0$

8. VA: $x = 0, x = 1/2$
HA: $y = 1/3$