



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

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## 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:  $y = 1/3$