

Each table shows values for a rational function. Identify the location of the vertical asymptote, then tell the function's domain.

1a.

x	y
-4	2
-3	3
-2	Error
-1	-1

VA:

Domain:

1

x	y
0	-4
0.5	Error
1	8
1.5	5

VA:

Domain:

2

x	y
-1	4.5
0	0
1	Error
2	18

VA:

Domain:

3

x	y
-6	-2
-3	Error
0	0
3	Error

VA:

Domain:

For each rational function below, find the vertical asymptote algebraically by setting the denominator equal to zero.

4a.

$$y = \frac{4 + x}{x - 7}$$

VA: _____ Domain _____

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

VA: _____ Domain _____

5. $f(x) = \frac{x^2 - 4}{x^2 - 5x - 14}$

VA: _____ Domain _____

6. $f(x) = \frac{9x - 1}{6x - 15}$

VA: _____ Domain _____

7. $f(x) = \frac{5x - 4}{x^2 - 25}$

VA: _____ Domain _____

8. $f(x) = \frac{6x - 17}{x^2 + 7x - 18}$

VA: _____ Domain _____

Find the Horizontal Asymptote. (BOBYO, BOTNO, EATSDC)

$$9. k(x) = \frac{x^2 - 2x - 3}{x - 2}$$

HA: _____

$$10. a(x) = \frac{x + 3}{x^2 + 7x + 6}$$

HA: _____

$$11. t(x) = \frac{2x^2 - 2}{x^2 - 4}$$

HA: _____

$$12. e(x) = \frac{x - 2}{x^2 + x}$$

HA: _____

$$13. y(x) = \frac{3x^2 + x}{x^2 - 9}$$

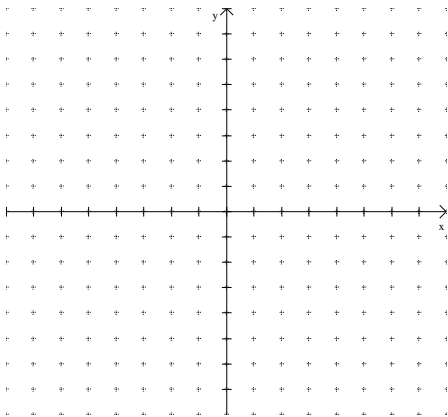
HA: _____

$$14. d(x) = \frac{2x^3 + 3x - 5}{x^2 - 2x - 15}$$

HA: _____

Sketch a graph of the following functions, **and** state the vertical and horizontal asymptotes.

$$15. y = \frac{1}{x - 3} - 2$$



Transformations:

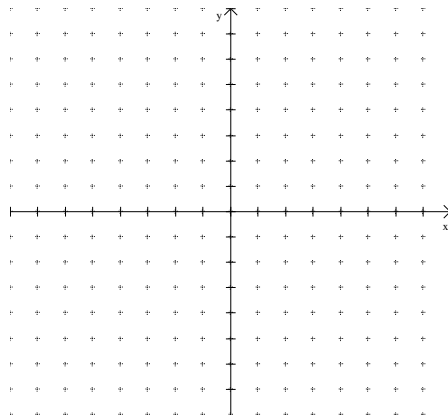
Vertical Asymptote: _____

Horizontal Asymptote: _____

Domain : _____

Range: _____

$$16. y = \frac{-2}{x + 1} + 3$$



Transformations:

Vertical Asymptote: _____

Horizontal Asymptote: _____

Domain: _____

Range: _____