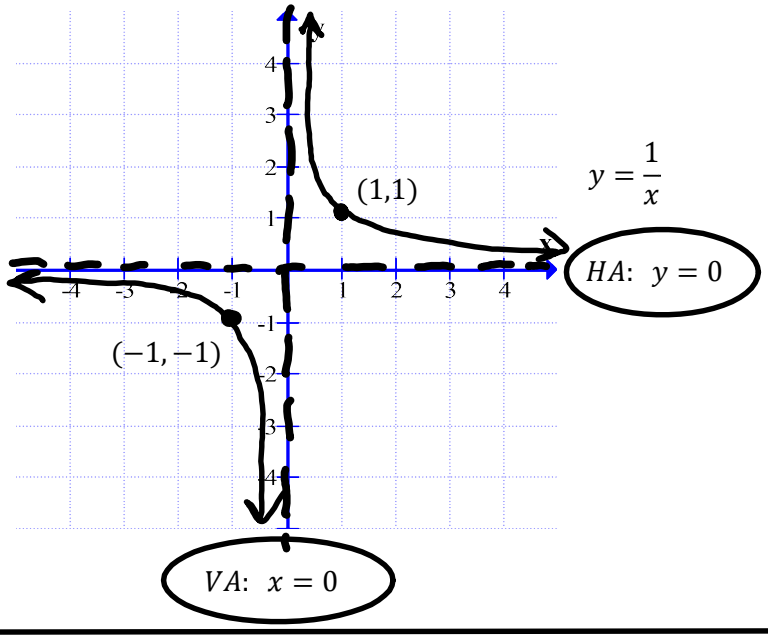
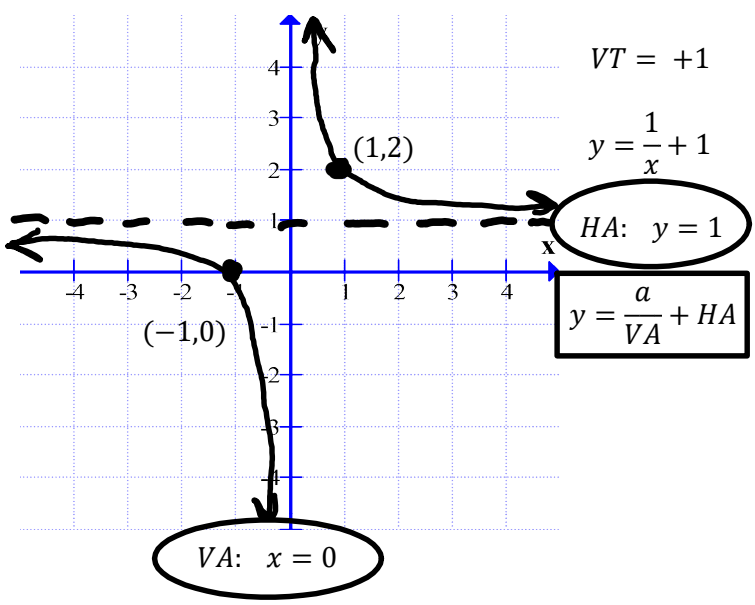
C12 - 9.2 - Graph VT Add Fractions Long Division Notes



x	y
-1	-1
0	und
1	1



Add Fractions

$$\frac{1}{x} + 1$$

LCD

$$\frac{1}{x} + 1 \times \frac{x}{x}$$

$$\frac{1}{x} + \frac{x}{x}$$

$$\frac{x+1}{x}$$

Long Division

$$\begin{array}{r} 1 \\ x \overline{)\, x+1} \\ x \\ \hline 1 \end{array}$$

remainder

$$\frac{x+1}{x} = 1 + \frac{1}{x}$$

$$y = \frac{x+1}{x}$$

$$\frac{P(x)}{x-a} = Q(x) + \frac{R}{x-a}$$

$$\frac{x+1}{x} = \frac{x}{x} + \frac{1}{x} = 1 + \frac{1}{x}$$

Separate Fractions

$$\frac{a+b}{c} = \frac{a}{c} + \frac{b}{c}$$

$x - int$:

$$y = \frac{1}{x} + 1$$
$$0 = \frac{1}{x} + 1$$
$$-1 = \frac{1}{x}$$
$$-1x = 1$$
$$x = -1$$

$$y = \frac{x+1}{x}$$
$$0 = \frac{x+1}{x}$$
$$x \times 0 = \frac{x+1}{x} \times x$$
$$0 = x + 1$$
$$x = -1$$

$(-1,0)$

$y - int$:

$$y = \frac{1}{x} + 1$$
$$y = \frac{1}{0} + 1$$

$y \neq$

$$y = \frac{x+1}{x}$$
$$y = \frac{0+1}{0}$$

$y \neq$

x	y
-1	0
0	und
1	2