Apr. 5, 2017

Sect. 7-2b

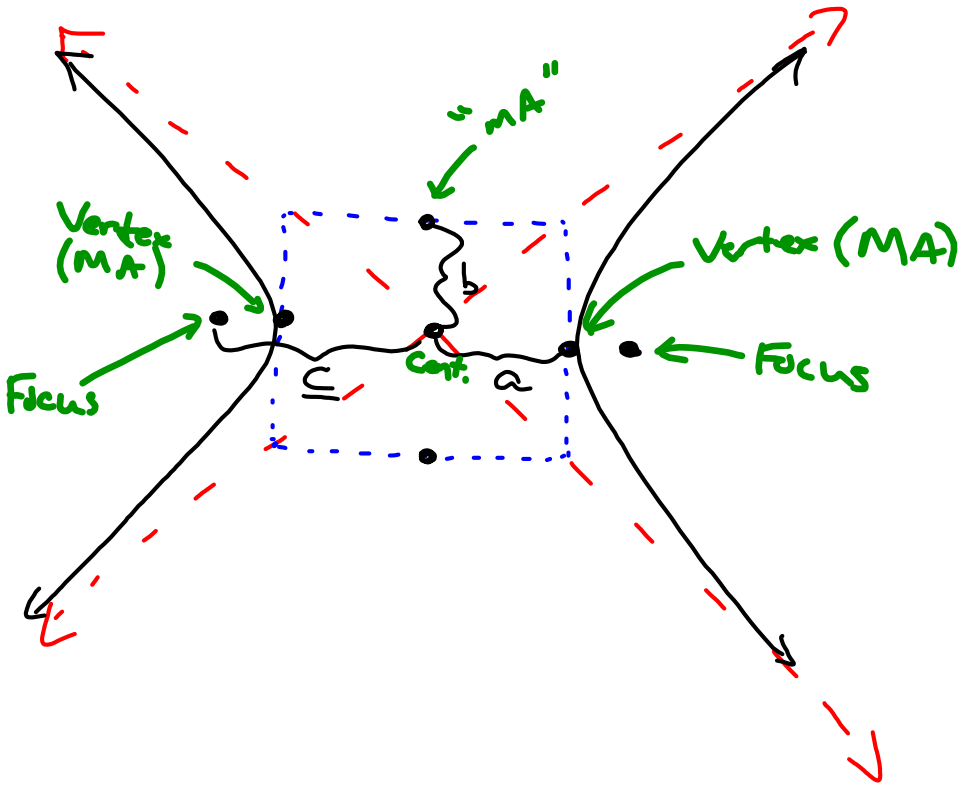
Hyperbolas)(

St. Form

Horiz. / Vert

C, V (MA), F

Asymptotes (mA)


"mA"
Vertex (MA)
Vertex (MA)
Focus
Focus
Cent.
b
c
a

St. Form

Horiz.: $\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1$

a^2 is always the first denom.

Vert.: $\frac{(y-k)^2}{a^2} - \frac{(x-h)^2}{b^2} = 1$

$c^2 = a^2 + b^2 \Rightarrow c = \sqrt{a^2+b^2}$

Graph: $\frac{x^2}{16} - \frac{y^2}{9} = 1$

Horiz:

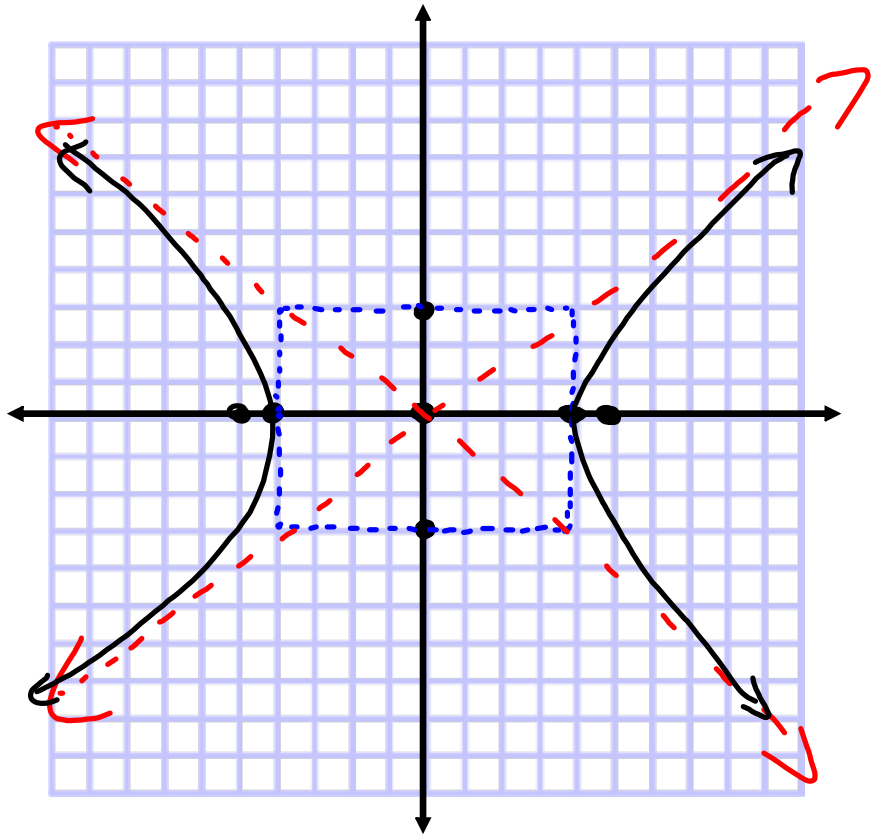
$C: (0,0)$

$V: (0 \pm 4, 0)$

$mA: (0, 0 \pm 3)$

$c = \sqrt{16+9} = \sqrt{25} = 5$

$F: (0 \pm 5, 0)$



$$6y^2 - 4x^2 - 36y - 8x + 26 = 0$$

$$(6y^2 - 36y) - (4x^2 + 8x) = -26$$

$$6(y^2 - 6y) - 4(x^2 + 2x) = -26$$

$$6(y^2 - 6y + (3)^2) - 4(x^2 + 2x + (1)^2) = -26 + 54 - 4$$

$$\frac{6(y-3)^2}{24} - \frac{4(x+1)^2}{24} = \frac{24}{24}$$

$$\frac{(y-3)^2}{4} - \frac{(x+1)^2}{6} = 1$$

Graph: $\frac{(y-3)^2}{4} - \frac{(x+1)^2}{6} = 1$

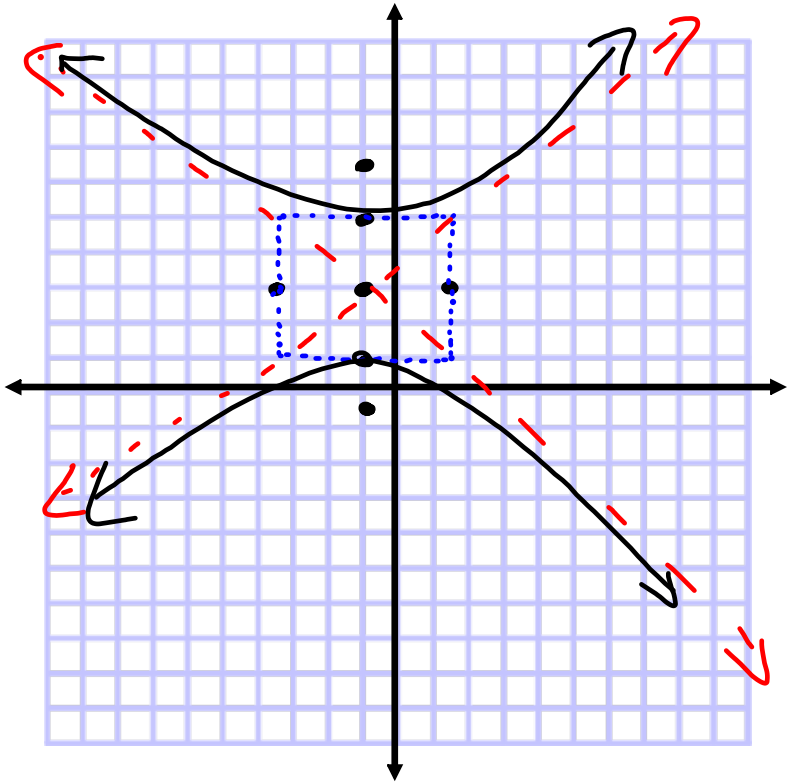
Vert.: $C: (-1, 3)$

$V: (-1, 3 \pm 2)$

$mA: (-1 \pm \sqrt{6}, 3)$

$c = \sqrt{4+6} = \sqrt{10}$

$F: (-1, 3 \pm \sqrt{10})$



Clswk: Sect. 10-5

p. 566

1-17 O (Graph)

#24, 26

p. 574

#6, 8, 21