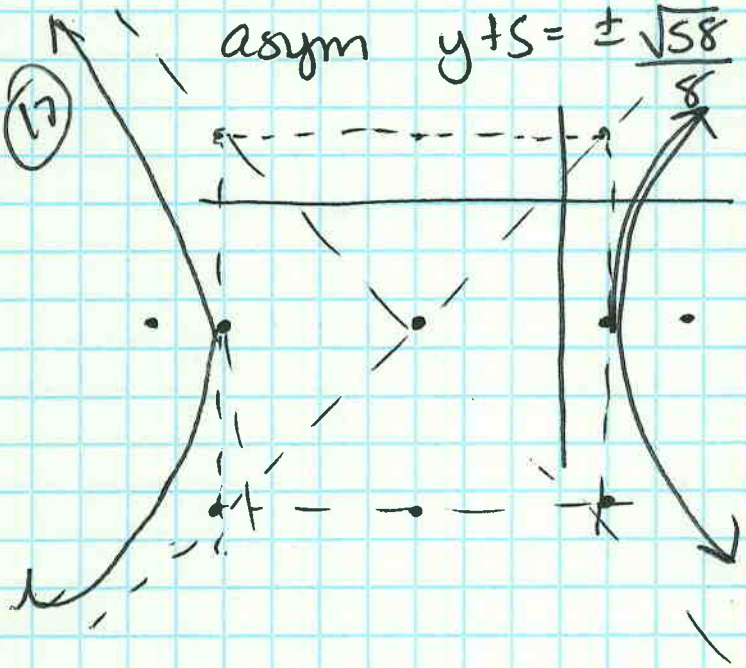
7-3 17-20,

17. center $(-6,5)$ V $(2,-5)$ $(-14,-5)$ f $(5.05,-5)$ $(-17.05,-5)$

asym $y+5 = \pm\frac{\sqrt{58}}{8}(x+6)$

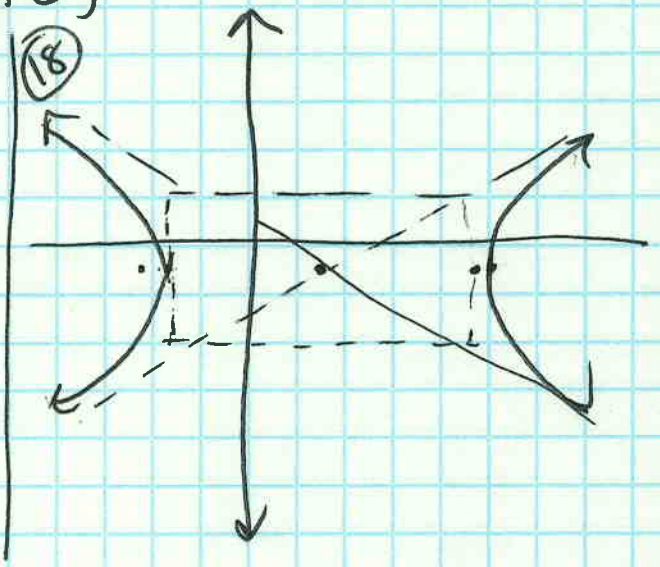


18. $\frac{(x-3)^2}{40} - \frac{(y+1)^2}{10} = 1$ center $(3,-1)$

V $(9.32,-1)$ $(-3.32,-1)$

F $(10.07,-1)$ $(-4.07,-1)$

asym $y+1 = \pm\frac{1}{2}(x-3)$



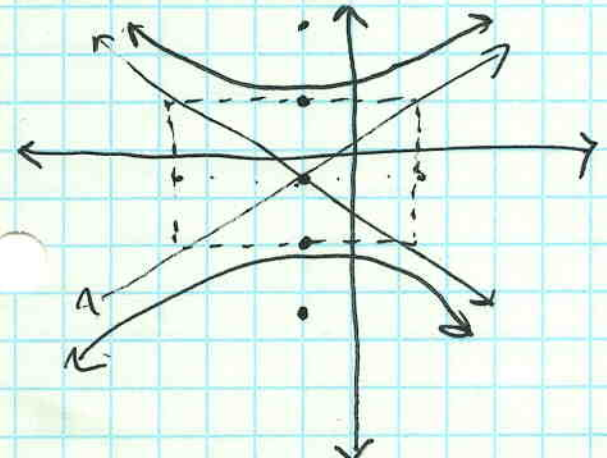
19. $\frac{(y+1)^2}{9} - \frac{(x+2)^2}{27} = 1$

center $(-2,-1)$

V $(-2,2)$ $(-2,-4)$

F $(-2,5)$ $(-2,-7)$

asym: $y+1 = \pm\frac{\sqrt{3}}{3}(x+2)$



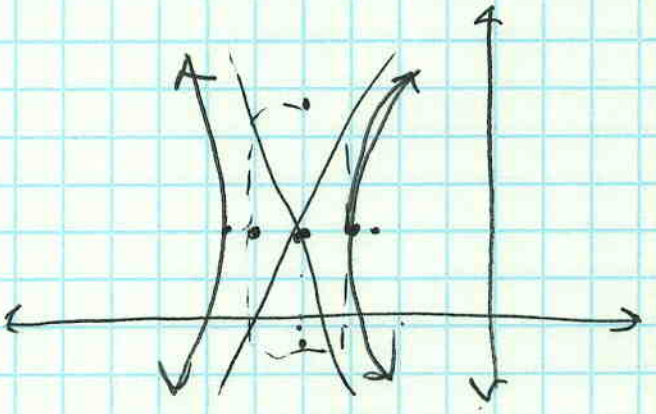
20 $\frac{(x+8)^2}{4} - \frac{(y-4)^2}{26} = 1$

center $(-8,4)$

V $(-6,4)$ $(-10,4)$

F $(-2.5,4)$ $(-13.5,4)$

asym $y-4 = \pm\frac{\sqrt{26}}{2}(x+8)$



23 $\frac{(y-1)^2}{15} - \frac{(x+1)^2}{49} = 1$

24 $\frac{(x-1)^2}{36} - \frac{(y-5)^2}{64} = 1$

27 $\frac{(y+8)^2}{16} - \frac{(x+3)^2}{33} = 1$

28 $\frac{(x+2)^2}{4} - \frac{(y+3)^2}{36} = 1$

31 $e = \frac{\sqrt{23}}{\sqrt{10}} \approx 1.52$

32 $e = \frac{\sqrt{39}}{\sqrt{24}} \approx 1.27$