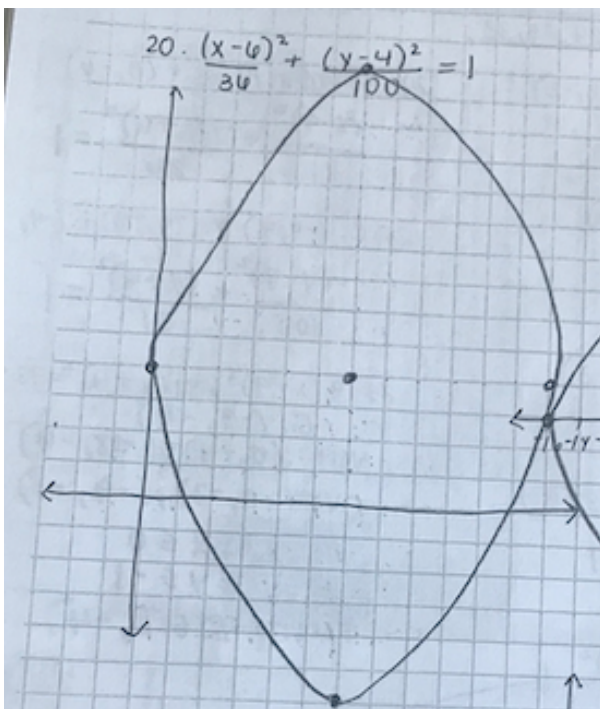
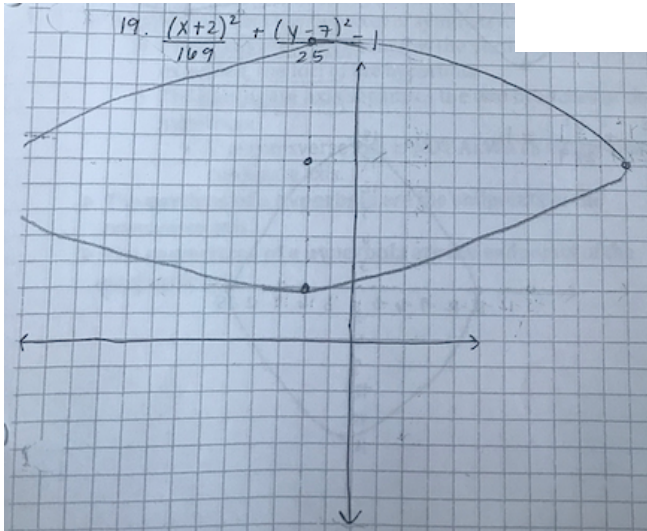


HW 4 - Pg. 740 #19, 20, 24, 25, 33



24. tangent at (9, 0) + (0, -6)

$$\frac{(x-9)^2}{81} + \frac{(y+6)^2}{36} = 1$$

25. C: (-4, 7) V: (-4, -3) F: (-4, 1)

$$\frac{(y-7)^2}{100} + \frac{(x+4)^2}{51} = 1$$

33. $9(x+9)^2 + 81(y+4)^2 = 72$

C: (-9, -4)

vert: (0, -4), (-18, -4)

CV: (-9, -7), (-9, -1)

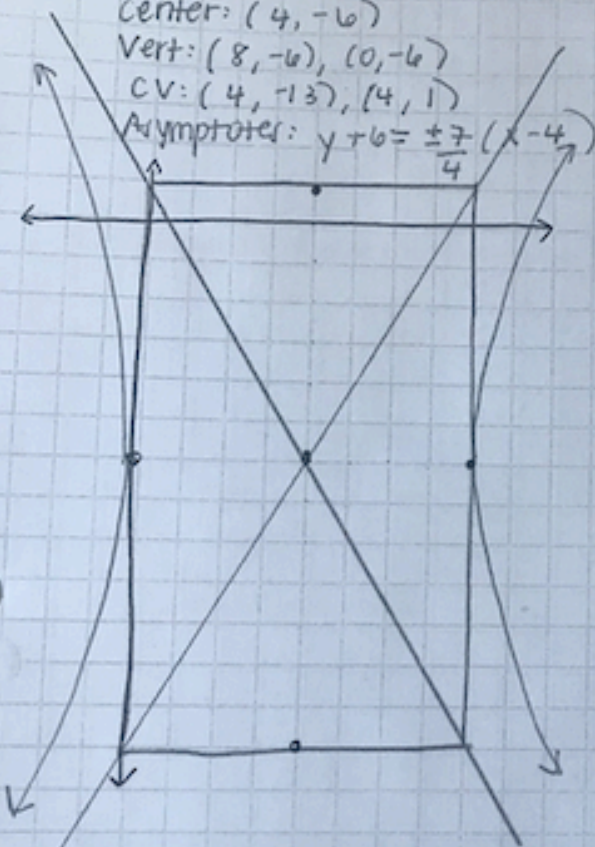
D: $-18 \leq x \leq 0$

R: $-7 \leq y \leq -1$

Foci: $(-9 \pm 6\sqrt{2}, -4)$

Pg. 748 # 13-15, 21, 27, 28

$$13. \frac{(x-4)^2}{16} - \frac{(y+6)^2}{49} = 1$$

center: $(4, -6)$ Vert: $(8, -6), (0, -6)$ CV: $(4, -13), (4, 1)$ Asymptotes: $y+6 = \pm \frac{7}{4}(x-4)$ 

$$14. \frac{(y+8)^2}{36} - \frac{(x+3)^2}{25} = 1$$

C: $(-3, -8)$ Vert: $(-3, 2), (-3, -14)$ CV: $(2, -8), (-8, -8)$

Asymptotes:

$$y+8 = \pm \frac{6}{5}(x+3)$$

$$15. \frac{(y+7)^2}{4} - \frac{x^2}{25} = 1$$

center: $(0, -7)$ Vert: $(0, -5), (0, -9)$ CV: $(5, -7), (-5, -7)$

Asymptotes:

$$y+7 = \pm \frac{2}{5}x$$

$$21. \frac{(x-3)^2}{49} - \frac{(y-3)^2}{9} = 1$$

$$27. \frac{(x+5)^2}{25} - \frac{(y-3)^2}{16} = 1$$

center: $(-5, 3)$ Vert: $(0, 3), (-10, 3)$ CV: $(-5, 7), (-5, -1)$

Asymptotes:

$$y-3 = \pm \frac{4}{5}(x+5)$$

$$28. \frac{(y-8)^2}{25} - \frac{(x+6)^2}{36} = 1$$

center: $(-6, 8)$ Vert: $(-6, 13), (-6, 3)$ CV: $(0, 8), (-12, 8)$

Asymptotes:

$$y-8 = \pm \frac{5}{6}(x+6)$$