Turkey's Revenge

DATE Solutions

1 $(y-3)^2 = 4(x-7)$

vertex: $\boxed{(7,3)}$

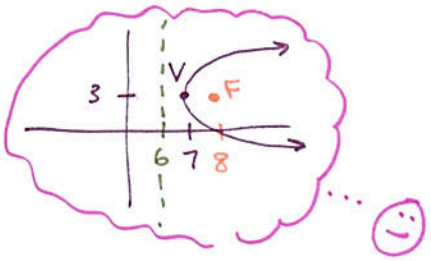
$4 = 4p$

$1 = p$

focus: $(7+1, 3)$

$\boxed{(8,3)}$

directrix: $x = 7-1 \rightarrow \boxed{x=6}$

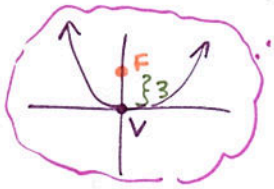


b. $(7,3)$; $(8,3)$; $x=6$

6 vertex @ $(0,0)$

focus @ $(0,3)$ } distance from focus to vertex is p

$p = 3$



$(x-h)^2 = 4p(y-k)$

$(x-0)^2 = 4(3)(y-0) \longrightarrow x^2 = 12y \rightarrow \frac{1}{12}x^2 = y$

d. $y = \frac{1}{2}x^2$

4 $\frac{(x+5)^2}{9} + \frac{(y+2)^2}{25} = 1$

center: $(-5,-2)$

$a^2 = 25$

$a = 5$

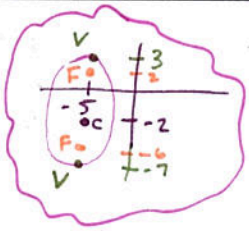
vertices: $(-5,3)$ and $(-5,-7)$

foci: $(-5,2)$ and $(-5,-6)$

$a^2 = b^2 + c^2$

$25 = 9 + c^2$

$16 = c^2 \rightarrow c = 4$

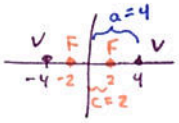


a. $(-5,-2)$; $(-5,-7)$ + $(-5,3)$; $(-5,-6)$ + $(-5,2)$

2 vertices: $(4,0)$ and $(-4,0)$

foci: $(2,0)$ and $(-2,0)$

center: $(0,0)$



$a = 4$

$c = 2$

$a^2 = b^2 + c^2$

$4^2 = b^2 + 2^2$

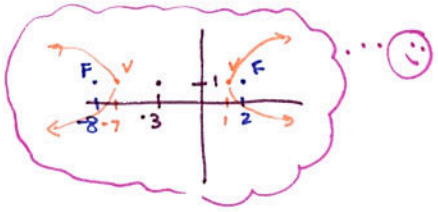
$16 = b^2 + 4$

$12 = b^2$

$\frac{(x-0)^2}{4^2} + \frac{(y-0)^2}{12} = 1 \rightarrow \frac{x^2}{16} + \frac{y^2}{12} = 1$

b. $\frac{x^2}{16} + \frac{y^2}{12} = 1$

3 $\frac{(x+3)^2}{16} - \frac{(y-1)^2}{9} = 1$



center : $(-3, 1)$

$a^2 = 16$

$a = 4$

vertices: $(1, 1)$ and $(-7, 1)$

$c^2 = a^2 + b^2$

$c^2 = 16 + 9$

$c^2 = 25$

$c = 5$

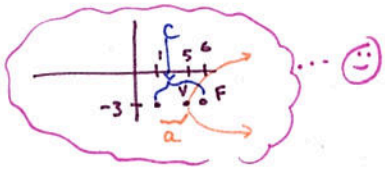
foci : $(2, 1)$ and $(-8, 1)$

b. $(1,1)$ and $(-7,1)$; $(-8,1)$ & $(2,1)$

5 center : $(1, -3)$

focus : $(6, -3)$

vertex : $(5, -3)$



$a = 5 - 1$ $\quad c = 6 - 1$

$a = 4$ $\quad c = 5$

$c^2 = a^2 + b^2$

$5^2 = 4^2 + b^2$

$25 = 16 + b^2$

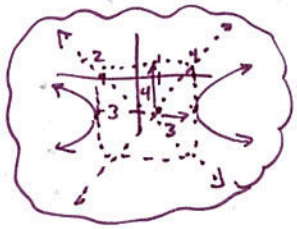
$9 = b^2$

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

$\frac{(x-1)^2}{16} - \frac{(y+3)^2}{9} = 1$

c. $\frac{(x-1)^2}{16} - \frac{(y+3)^2}{9} = 1$

7 $\frac{(x-1)^2}{9} - \frac{(y+3)^2}{16} = 1$



$a^2 = 9$ $\quad b^2 = 16$

$a = 3$ $\quad b = 4$

asymptotes : $y = \pm \frac{4}{3}(x-1) - 3$

$m = \pm \frac{4}{3}$

b. $\pm \frac{4}{3}$