

SOLUTIONS TO ASSIGNMENT #10.7C

PAGE 645 #11-23, 25-35 odd

11. $(x-4)^2 = y+7$

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

PARABOLA

V (4, -7) $4p = 1$

F (4, -6.75) $p = \frac{1}{4}$

directrix: $y = -7.25$

12. $(x-3)^2 + (y+2)^2 = 1$

CIRCLE

Center (3, -2)

$r = 1$

13. $\frac{(x+6)^2}{4} + \frac{(y-7)^2}{1} = 1$

ELLIPSE

$a^2 = 4$ $b^2 = 1$

$a = 2$ $b = 1$

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

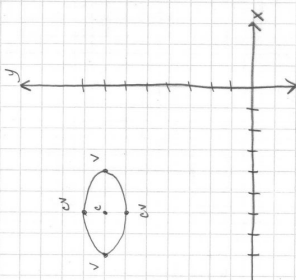
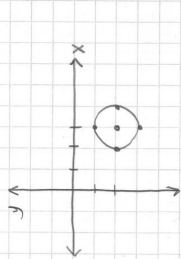
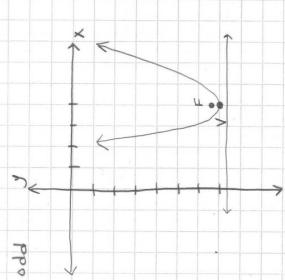
$c = \sqrt{3}$

Center (-6, 7)

V (-8, 7) (-4, 7)

CV (-6, 8) (-6, 6)

F (-6 + $\sqrt{3}$, 7) (-6 - $\sqrt{3}$, 7)



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

HYPERBOLA

Center (4, -4)

$a^2 = 16$ $b^2 = 16$

$a = 4$ $b = 4$

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

$c = 4\sqrt{2}$

V (8, -4) (0, -4)

F (4 + 4 $\sqrt{2}$, -4) (4 - 4 $\sqrt{2}$, -4)

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

HYPERBOLA

Center (-1, -2)

$a^2 = 4$ $b^2 = 16$

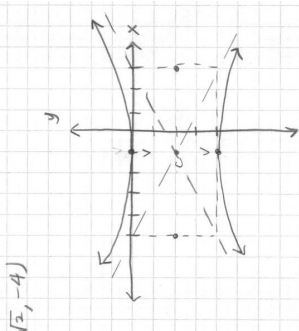
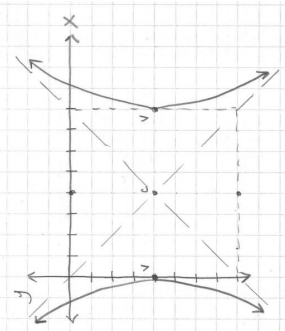
$a = 2$ $b = 4$

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

$c = 2\sqrt{5}$

V (-1, 0) (-1, -4)

F (-1, -2 + 2 $\sqrt{5}$) (-1, -2 - 2 $\sqrt{5}$)



16. PARABOLA

V (0, 0) directrix: $x = 5$

$p = -5$

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

$y^2 = -20x$

17. PARABOLA

V (3, -6) F (3, -4)

$p = 2$

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

$(x-3)^2 = 8(y+6)$

18. CIRCLE

C (0, 0) pt (4, 6)

$r = \sqrt{(0-4)^2 + (0-6)^2} = \sqrt{16+36} = \sqrt{52} = 2\sqrt{13}$

$(x-h)^2 + (y-k)^2 = r^2$

$x^2 + y^2 = 52$

19. CIRCLE

C (-8, 3) $r = 5$

$(x-h)^2 + (y-k)^2 = r^2$

$(x+8)^2 + (y-3)^2 = 25$

