

Conics Review

parabolas $y = a(x-h)^2 + k$ $p = \frac{1}{4a}$
 $x = a(y-k)^2 + h$

LRF - chord across the parabola through the focus = $4p$ tangent problems
 $p = v \rightarrow D, v - F$

Ellipses $\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$ $\frac{(x-h)^2}{b^2} + \frac{(y-k)^2}{a^2} = 1$
 $a > b > 0$ horizontal vertical
 $a^2 - b^2 = c^2$ $a = m \rightarrow v$
 $a > c$ $b = m \rightarrow os$ bigger denom
 $c = m \rightarrow F$ determines direction

eccentricity $e = \frac{c}{a}$

apogee \rightarrow object orbiting is furthest distance
 perigee \rightarrow object orbiting is closest distance

Hyperbola $\frac{(x-h)^2}{a^2} - \frac{(y-k)^2}{b^2} = 1$ Horizontal x's are first
 $a^2 + b^2 = c^2$ $\frac{(y-k)^2}{a^2} - \frac{(x-h)^2}{b^2} = 1$ Vertical y's are first

H transverse axis - cuts through branches the axis with the points
 conjugate axis - between the curves

asymptotes $(y-k) = \pm \frac{rise}{run}(x-h)$

Word problems for all conics!

Apr 26-7:28 AM

GO COUGARS!



Homework Questions

$(40, 10)$ $y = ax^2 + k$
 $(50, 0)$ $10 = a(40)^2 + k$ $0 = 2500a + k$
 $10 = 1600a + k$

$(a-2, 2.5)$ $y = -\frac{1}{90}x^2 + k$

$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$
 $\frac{(a-2)^2}{a^2} + \frac{2.5^2}{16} = 1$

Feb 2-9:51 PM

HOMework



p 801 13-44 omit 39, 40

Review Worksheet

Aug 29-6:38 AM

Conics Worksheet Sans Circles Key

<p>1. Parabola $x = \frac{-1}{8}y^2$</p> <p>3. Ellipse $\frac{(x-2)^2}{25} + \frac{(y+2)^2}{21} = 1$</p> <p>5. Parabola $x = \frac{1}{8}(y+3)^2 + 2$ or $x = \frac{-1}{8}(y+3)^2 + 2$</p> <p>7. Ellipse $\frac{(x-2)^2}{5} + \frac{(y-2)^2}{9} = 1$</p> <p>9. Hyperbola $\frac{(y+1)^2}{4} - \frac{(x-1)^2}{9} = 1$</p> <p>11. Hyperbola: $m(-2,2)$ $v(-2,4)$ $v(-2,0)$ $F(-2, \pm\sqrt{5})$</p> <p>14. Ellipse: $m(3,-2)$ $v(3, -2 \pm 3\sqrt{2})$ $F(3,2)$ $(3,-6)$</p> <p>17. Hyperbola: $m(3,-2)$ $v(5,-2)$ $(1,-2)$ $F(3 \pm 2\sqrt{5}, -2)$ $y+2 = \pm 2(x-3)$</p> <p>19. $\frac{x^2}{100} + \frac{y^2}{36} = 1$</p>	<p>2. Hyperbola $\frac{(y+4)^2}{4} - \frac{(x+3)^2}{12} = 1$</p> <p>4. Hyperbola $\frac{(x-5)^2}{1} - \frac{(y-7)^2}{3} = 1$</p> <p>6. Ellipse $\frac{(x-2)^2}{16} + \frac{(y-1)^2}{7} = 1$</p> <p>8. Parabola $y = \frac{1}{4}(x+3)^2 + 3$</p> <p>10. $y = -(x-1)^2 + 2$</p> <p>12. Parabola: $v(-1,2)$ $F(1,2)$ $D: x = -3$</p> <p>13. Ellipse: $m(3,-1)$ $v(3,2)$ $(3,-4)$ $F(3, -1 \pm \sqrt{5})$</p> <p>15. Parabola: $v(0,2)$ $F(-1,2)$ $D: x = 1$</p> <p>16. Hyperbola: $m(2,1)$ $v(2,3)$ $(2,-1)$ $F(2, 1 \pm \sqrt{3})$ $y-1 = \pm 2(x-2)$</p> <p>18. Ellipse: $m(1,-2)$ $v(1,1)$ $(1,-5)$ $F(1, -2 \pm \sqrt{5})$</p> <p>20. Focus=1.5625 ft</p>
--	--

Nov 16-11:58 AM