

**Exam 1:**

1.  $\frac{2}{9}$                       2.  $164^\circ 28' 46''$                       3.  $x = 16.5$  meters  
 $y = 24^\circ 35'$

4.  $-\frac{\sqrt{29}}{2}$                       5. Length of arc:  $\frac{15}{2}$  cm or 7.5 cm  
 Area of shaded region: Not tested

6. 4.55, 4.87                      7.  $y = 5\sin 2x + \frac{1}{3}$

8. 
$$\frac{\frac{\sin}{\cos} + 1}{\frac{1}{\cos}} = \frac{\frac{\sin}{\cos} + \frac{\cos}{\cos}}{\frac{1}{\cos}} = \frac{\frac{\sin + \cos}{\cos}}{\frac{1}{\cos}} = \frac{\sin + \cos}{\cos} \cdot \frac{\cos}{1} = \sin + \cos$$

9.  $\frac{6}{\sqrt{85}}$                       10. 27 meters

**Exam 2:**

1.  $207.72^\circ, 332.28^\circ$                       2.  $\frac{48}{73}$                       3.  $\frac{5}{6}, \frac{5}{6}, \frac{3}{2}$

4. a) -1                      5. a)  $-\frac{1}{6}$                       6.  $\frac{1}{\sqrt{x^2 + 1}}$   
 b)  $-\frac{336}{625}$                       b)  $\frac{1}{4}$

7.  $\sin \cos + \cos \sin = (0)\cos + (-1)\sin = -\sin = -\sin$

8.  $= 108^\circ 6'$                        $b = 7.5$                        $c = 4.2$                       9. 94.4 miles

Exam 3:

1.  $-68i - 12j$

2.  $\sqrt{65}$

3.  $= 163^\circ$

4.  $6cis \frac{5}{3}$

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

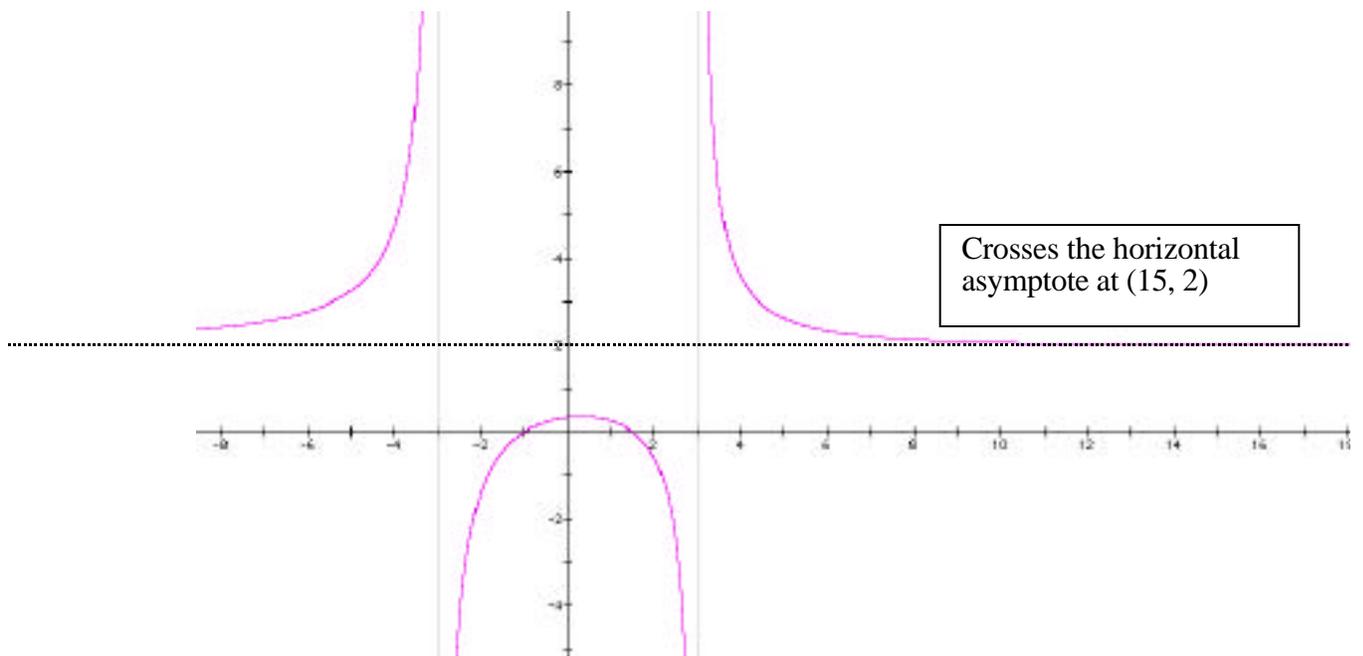
6.  $(x+4) = \frac{2}{3}(y-7)^2$

7.  $x$ -intercept(s):  $\frac{3}{2}, 0, (-1, 0),$

$y$ -intercept(s):  $0, \frac{1}{3},$

Vertical asymptote(s):  $x = 3, x = -3,$

Horizontal asymptote(s):  $y = 2$



8. Magnitude: 86.4 lbs., Direction:  $172.9^\circ$

9. Center:  $(0, 0)$ , Vertices:  $(0, 7), (0, -7)$ , Asymptotes:  $y = \pm \frac{7}{4}x$