

Quiz 11 Practice Test

<p>1. Given a circle $C_1 : (x+10)^2 + (y+3)^2 = 20$ and a point $P(-12, -7)$ on C_1, if another circle C_2 with radius of $\sqrt{5}$ intersects C_1 at exactly one point P. Find all possible equations of C_2</p>	$(x+11)^2 + (y+5)^2 = 5,$ $(x+13)^2 + (y+9)^2 = 5$
<p>2. Classify the following conics and write the conic in its standard form.</p> $4x^2 - y^2 + 8x - 6y + 4 = 0$	$\frac{(y+3)^2}{9} - \frac{(x+1)^2}{\frac{9}{4}} = 1$
<p>3. Given the focus of a hyperbola $F(6, 0)$, and the asymptotes of the hyperbola are $y = \pm\sqrt{2}(x-4)$, find standard form of the hyperbola.</p>	$\frac{(x-4)^2}{\frac{4}{3}} - \frac{y^2}{\frac{8}{3}} = 1$
<p>4. (8 points) Given the conic $2x^2 + 4xy + 5y^2 + 3x - 4y - 20 = 0$, Find a rotated coordinate system (x', y') so that the conic is in its standard form. Classify the conic and write its standard form in the rotated coordinate.</p>	$\begin{cases} x = \frac{1}{\sqrt{5}}x' - \frac{2}{\sqrt{5}}y' \\ y = \frac{2}{\sqrt{5}}x' + \frac{1}{\sqrt{5}}y' \end{cases},$ <p><i>ellipse,</i></p> $\frac{\left(x' - \frac{\sqrt{5}}{12}\right)^2}{\frac{605}{144}} + \frac{\left(y' - \sqrt{5}\right)^2}{\frac{605}{24}} = 1$
<p>5. Given $C : (x+3)^2 + (y-1)^2 = 20$ and a point $P(1, 3)$ on the circle, find the coordinate of a point Q (also on C) so that the distance from the center of the circle to the chord \overline{PQ} is $\sqrt{2}$</p>	$(-5, -3), \left(-\frac{37}{5}, \frac{9}{5}\right)$