Precalc 10.7-10.8

Find the equations of conic sections that have been translated or rotated
Graph transformations of conic sections
Use the discriminant to identify conic sections
Find the angle of rotation for a given equation
Graph and solve systems of second degree equations and inequalities

Quiz 10.7-10.8 is tomorrow: get your questions answered today!

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5. $\dfrac{(x-1)^2}{20} + \dfrac{(y-1)^2}{5} = 1$
$x - y = 0$

What is it?

Estimate answers

Subs/elim

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7. $9x^2 - 4y^2 = 36$
$x^2 + y^2 = 4$

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3 Graph the solutions for the system of inequalities.

$x^2 + 4y^2 \leq 4$

$x^2 > y^2 + 1$

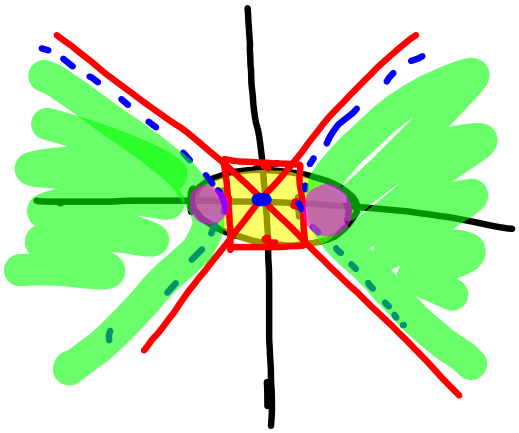
$0 > 0 + 1$

$\frac{x^2+4y^2}{4} = \frac{4}{4}$

$\frac{x^2}{4} + \frac{y^2}{1} = 1$

$\frac{x^2}{1} - \frac{y^2}{1} = 1$

Test point



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10. $(x-5)^2 + 2y < 10$

$y - 9 \geq -2x$

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$\theta = \frac{\pi}{6} = 30^\circ$

$y^2 + 8x = 0$

$x \to x'\frac{\sqrt{3}}{2} + y'\frac{1}{2}$

$y \to -x'\frac{1}{2} + y'\frac{\sqrt{3}}{2}$

$\left(-\frac{1}{2}x' + \frac{\sqrt{3}}{2}y'\right)^2 + 8\left(\frac{\sqrt{3}}{2}x' + \frac{1}{2}y'\right) = 0$

$4\cdot\frac{1}{4}(x')^2 - 4\cdot\frac{2\sqrt{3}}{4}x'y' + 4\cdot\frac{3}{4}(y')^2 + 4\cdot 4\sqrt{3}x' + 4\cdot 4y' = 4\cdot 0$

$(x')^2 - 2\sqrt{3}x'y' + 3(y')^2 + 16\sqrt{3}x' + 16y' = 0$

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