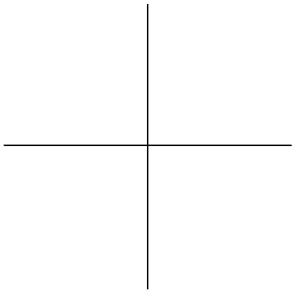
Math 141 Worksheet 7 Name_____
11/28/17 [/15]

Show all your work for full credit. Unsupported answers = 0 points. Use extra paper if necessary.

1. Algebraically find where the parabola $y = 2x^2 - 7$ intersects the circle $x^2 + y^2 = 4$ and make a sketch of both equations. Give exact values of the coordinates of intersection.



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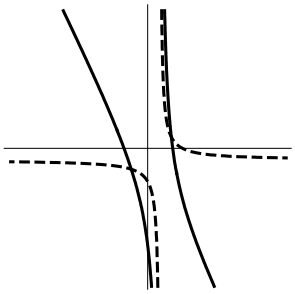
2. Find the intersection of the graphs of $2x^2 + xy - y = 9$ and $x + xy - y = 3$.



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3. Use matrices to find the equation of the parabola that passes through the points:
(2, 3), (4, 4), and (5, –3).

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4. Use matrices to help find the equation of the line formed by the intersection of the planes: $x + 2y - 5z = 10$ and $2x - y + 15z = 10$, and list three points on the line.

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Find the partial fraction decomposition of the following fractions:

5. $\frac{3x-1}{x^2+x-12}$ (Use any method to find the unknown coefficients.)

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6. $\frac{7x^2+10x+1}{(x+1)^2(x^2+3x+1)}$ (Use matrices to find the unknown coefficients.)

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