First Reading Survey

Read/skim sections 3.8 & 3.9 and answer a few brief questions.

- A link to the survey will be posted on the section website.
- The survey will be due on Monday (3/10) at noon.
- The survey will cover sections 3.8 & 3.9, as indicated on the course schedule.
- Goals:
  - You will be well prepared for class having been exposed to the topics before hand.
  - I will get direct input about what to highlight and expand on in our short time together.
- You get points for filling out the survey! (This will of course count towards your section grade.)

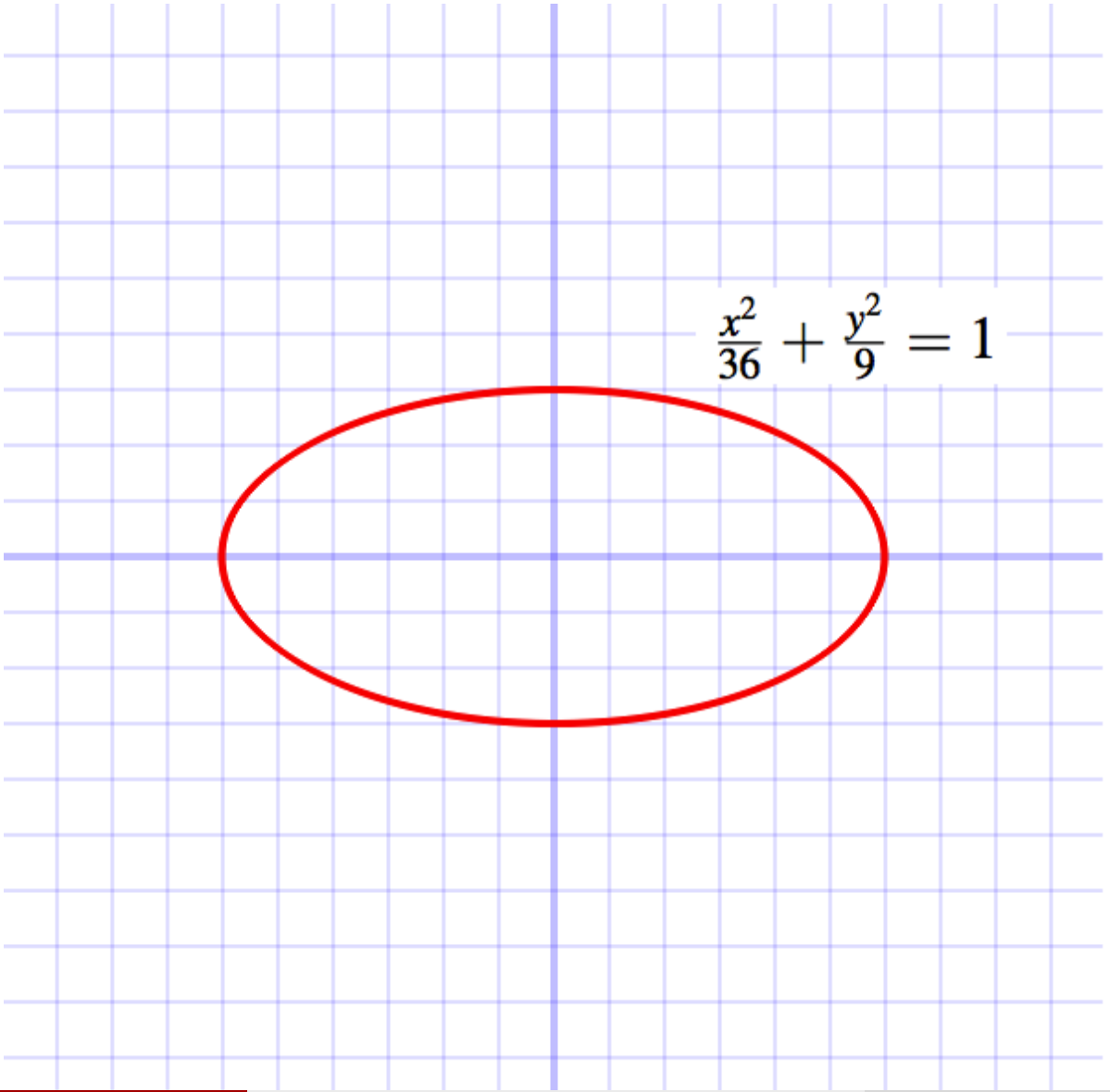
`http://www.math.cornell.edu/~araymer/math1110.html`

What does the curve corresponding to the equation

$$\frac{x^2}{36} + \frac{y^2}{9} = 1$$

look like?

Ellipse



What does it mean if I say that a point (x_0, y_0) is a solution to the equation $\frac{x^2}{36} + \frac{y^2}{9} = 1$?

It means

$$\frac{x_0^2}{36} + \frac{y_0^2}{9} = 1.$$

For example, (0,3) and (6,0) are both solutions to this equation.

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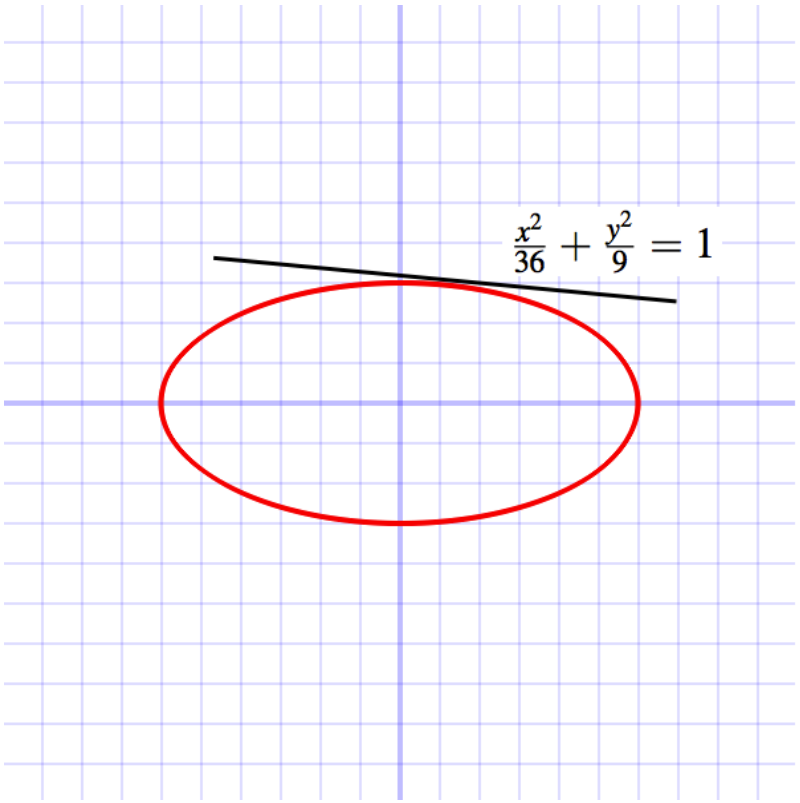
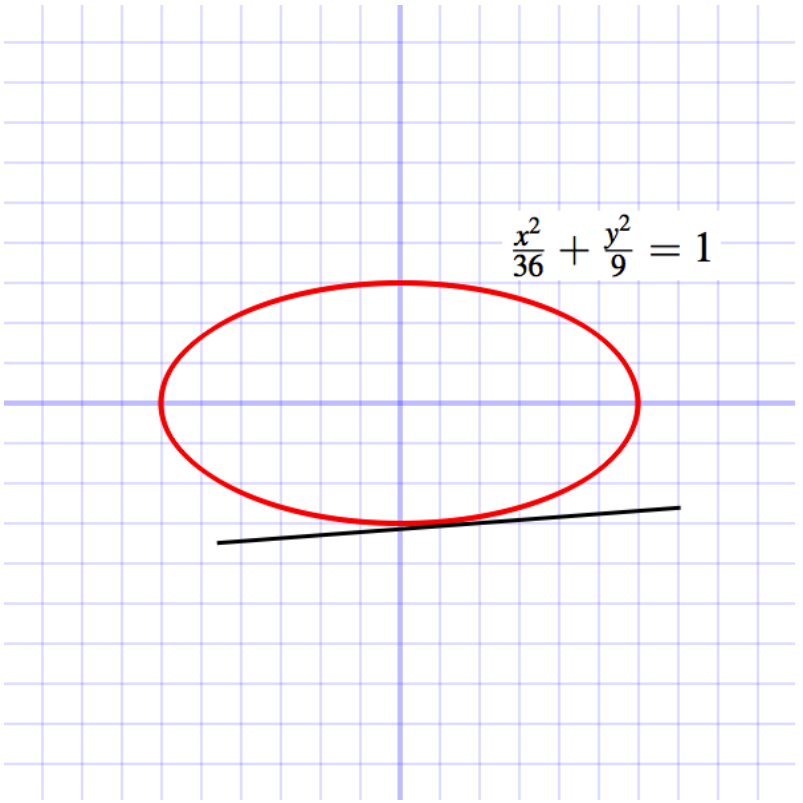
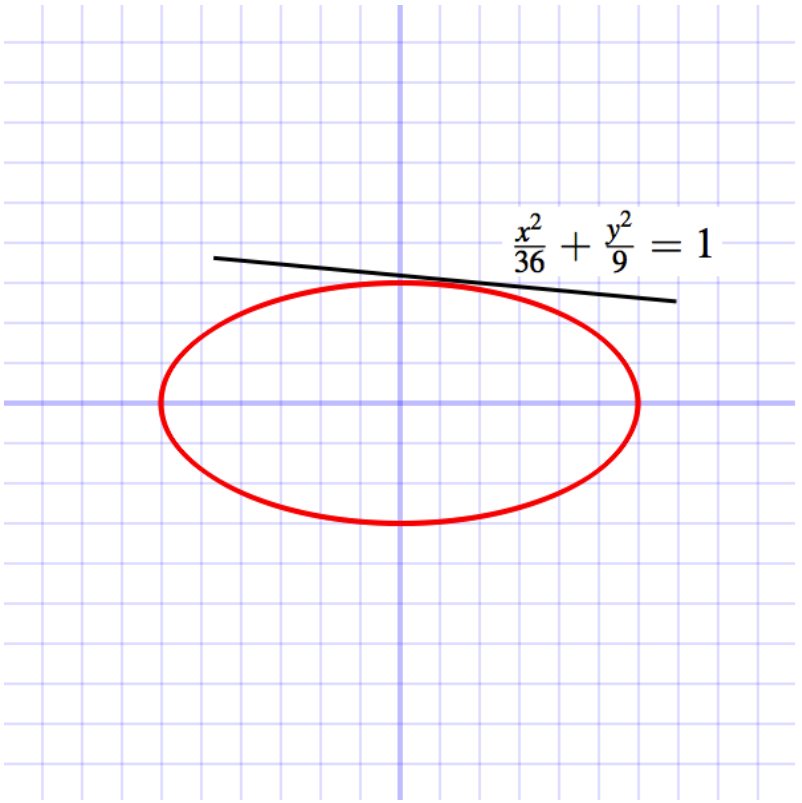
Tangent at $x = 1$?

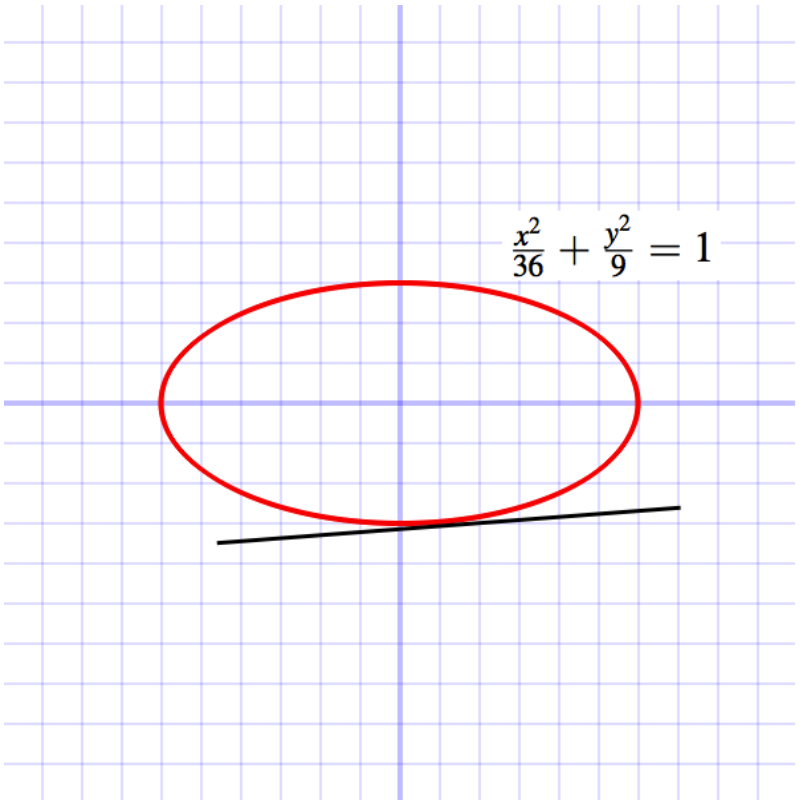




Now, need to specify a point, not just x value.

Tangent at $x = 1$?





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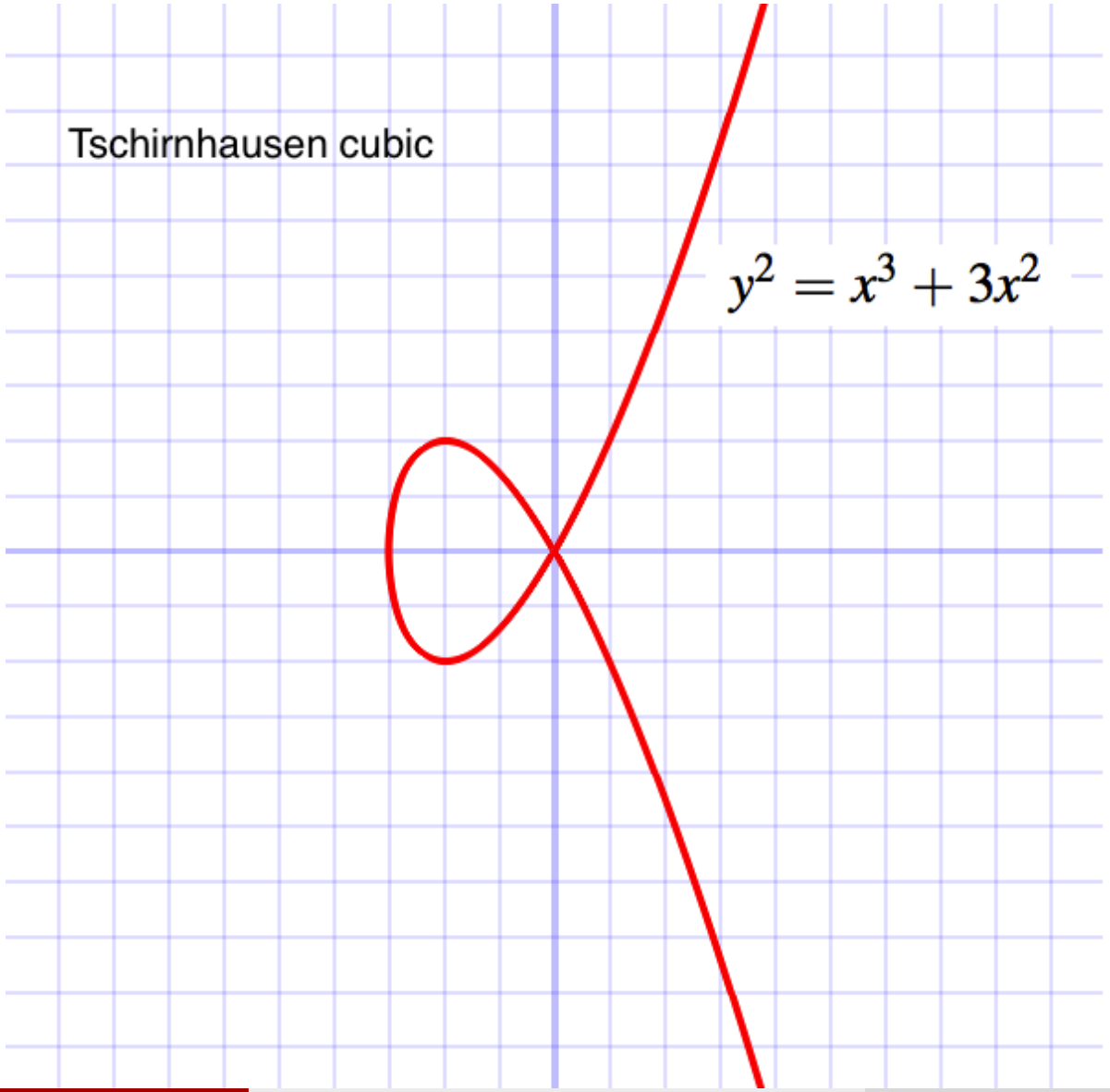
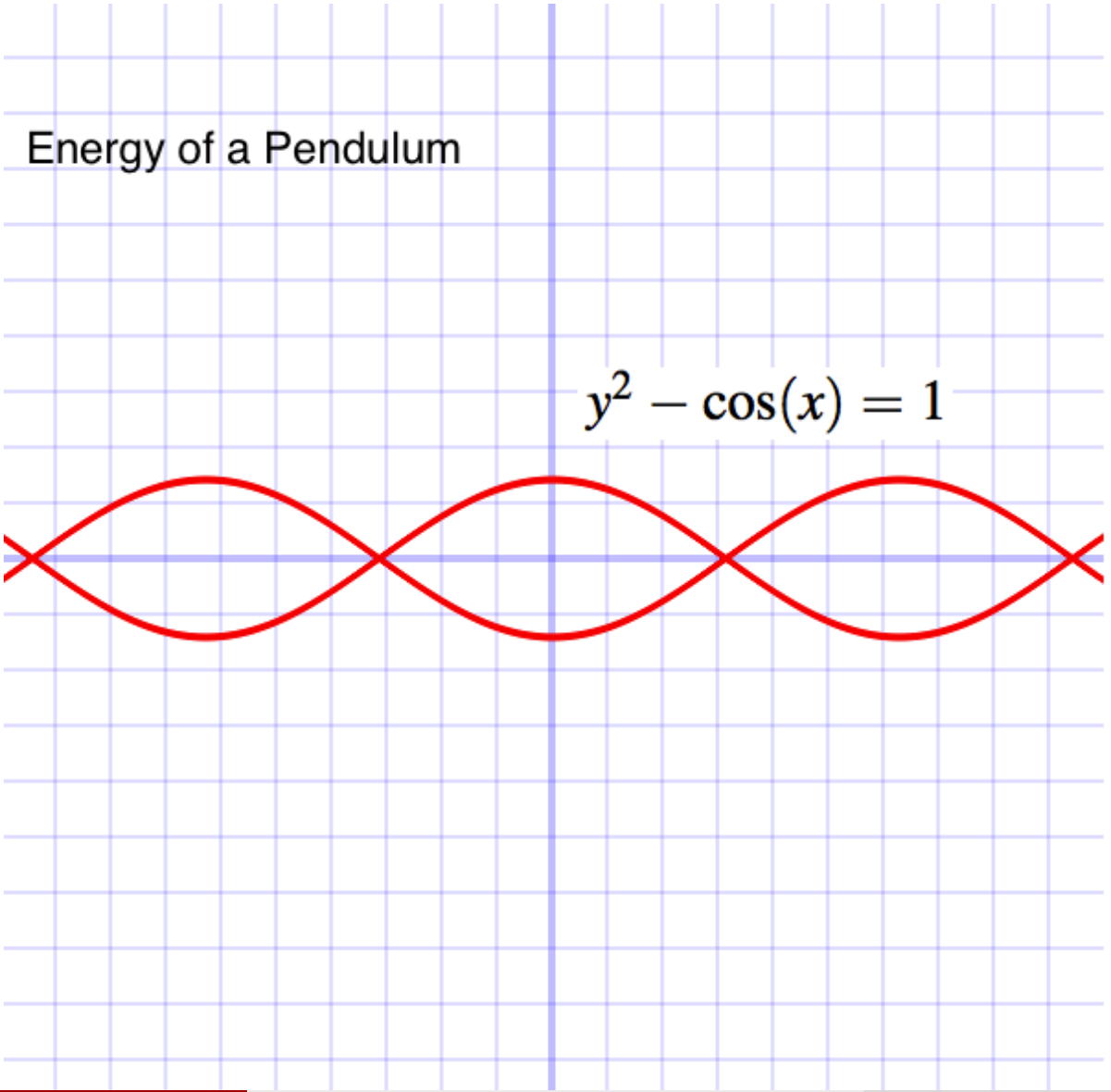
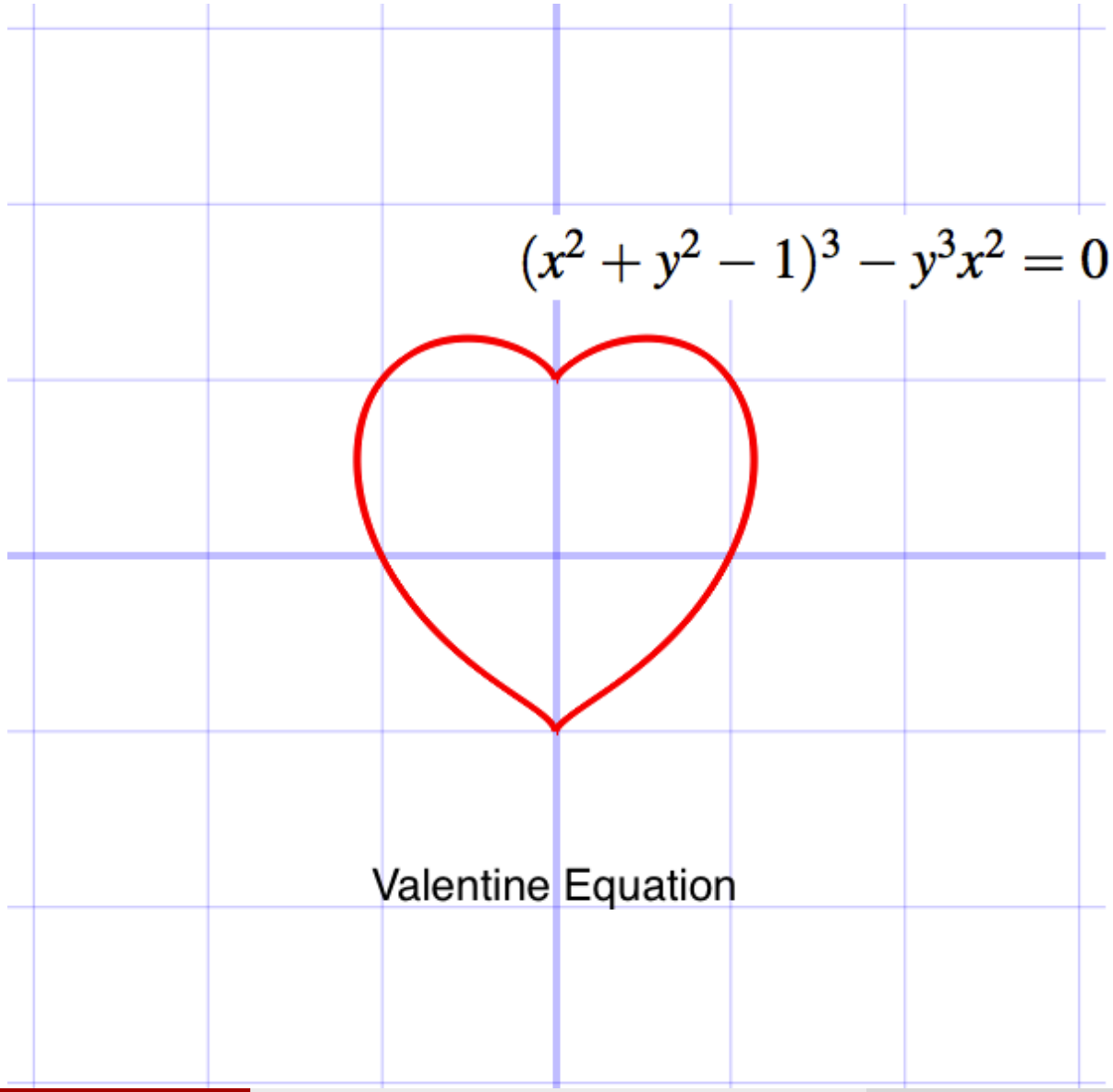
Tschimhausen cubic



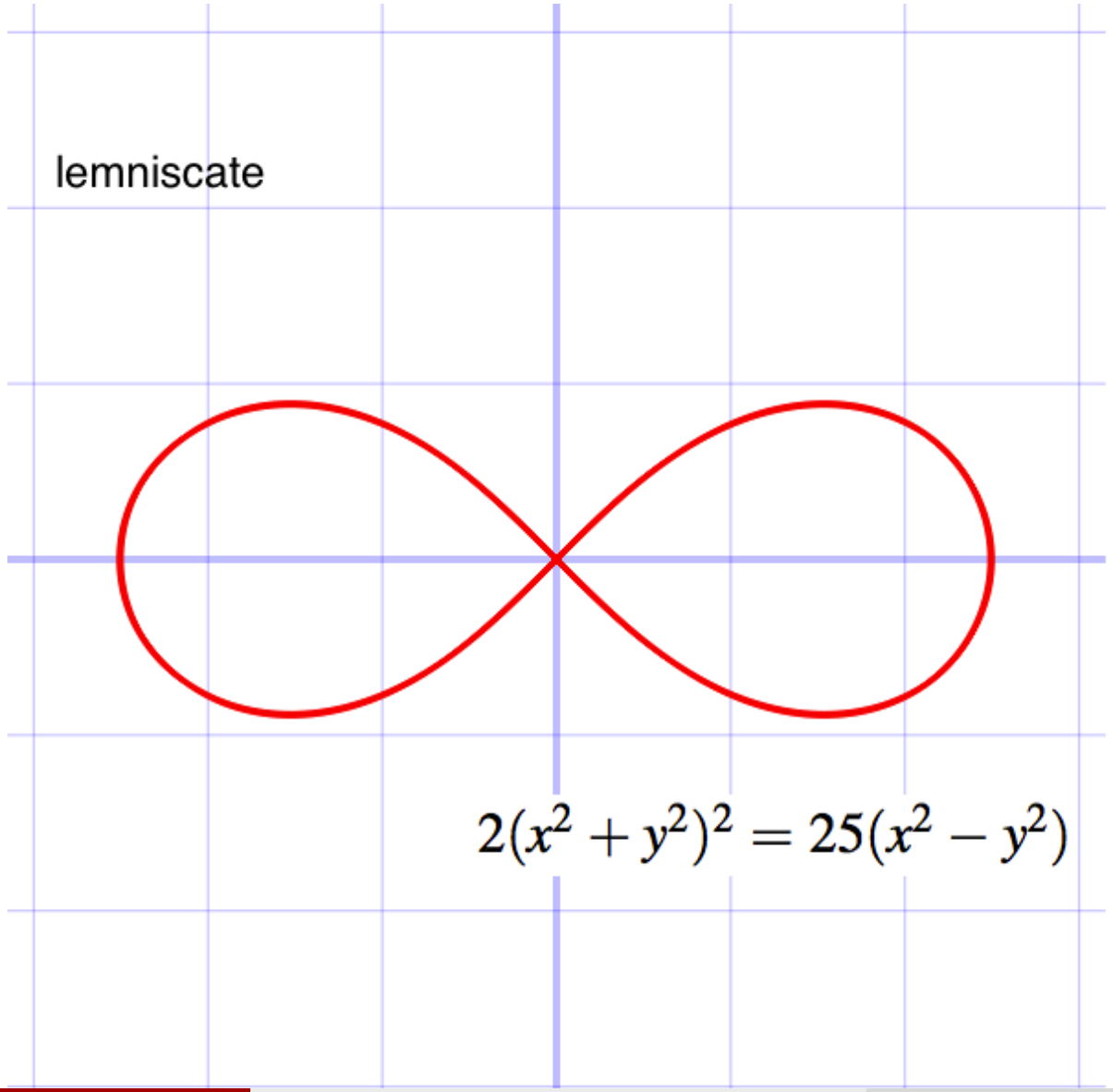
Energy of a Pendulum



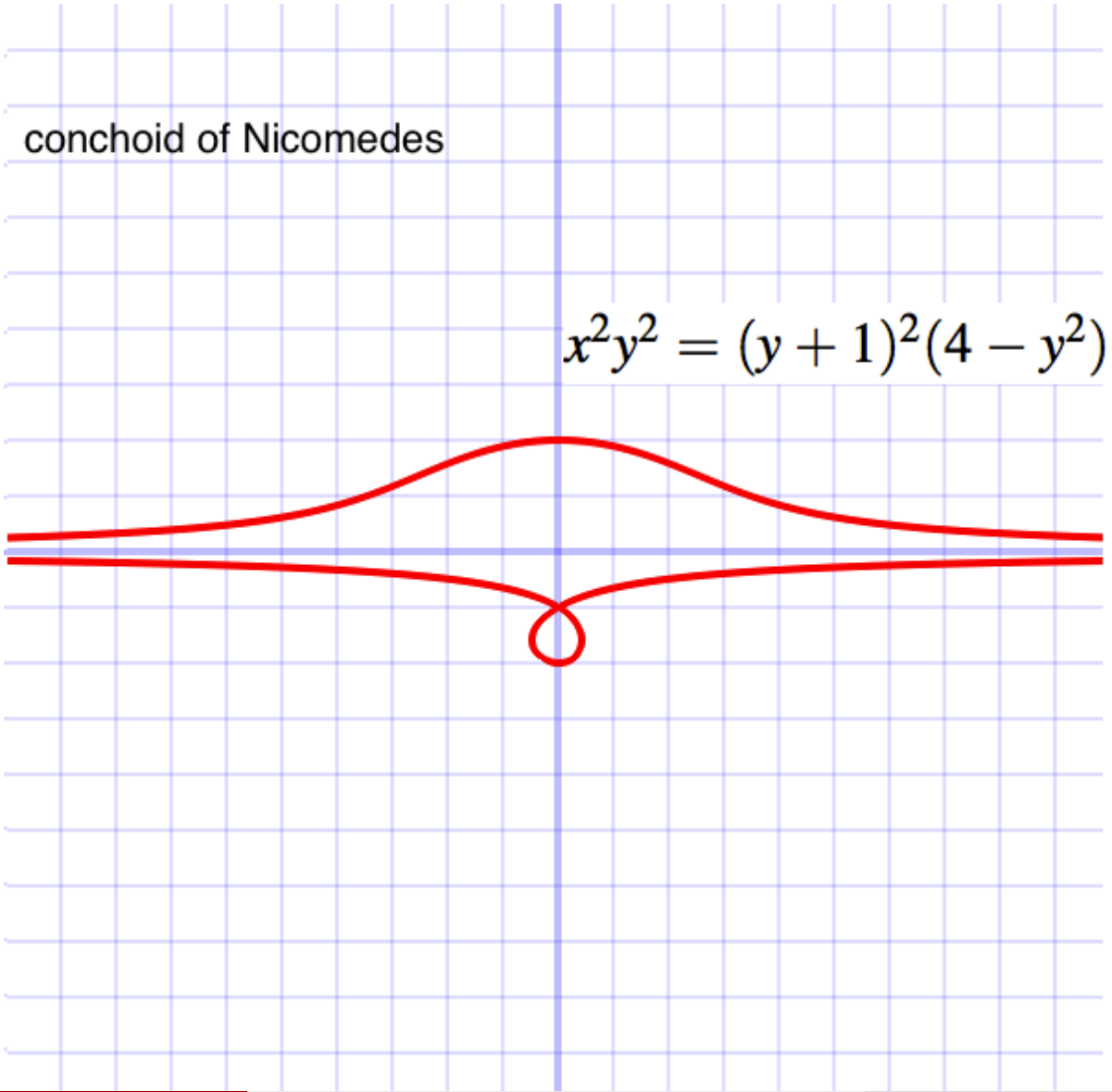
Valentine Equation

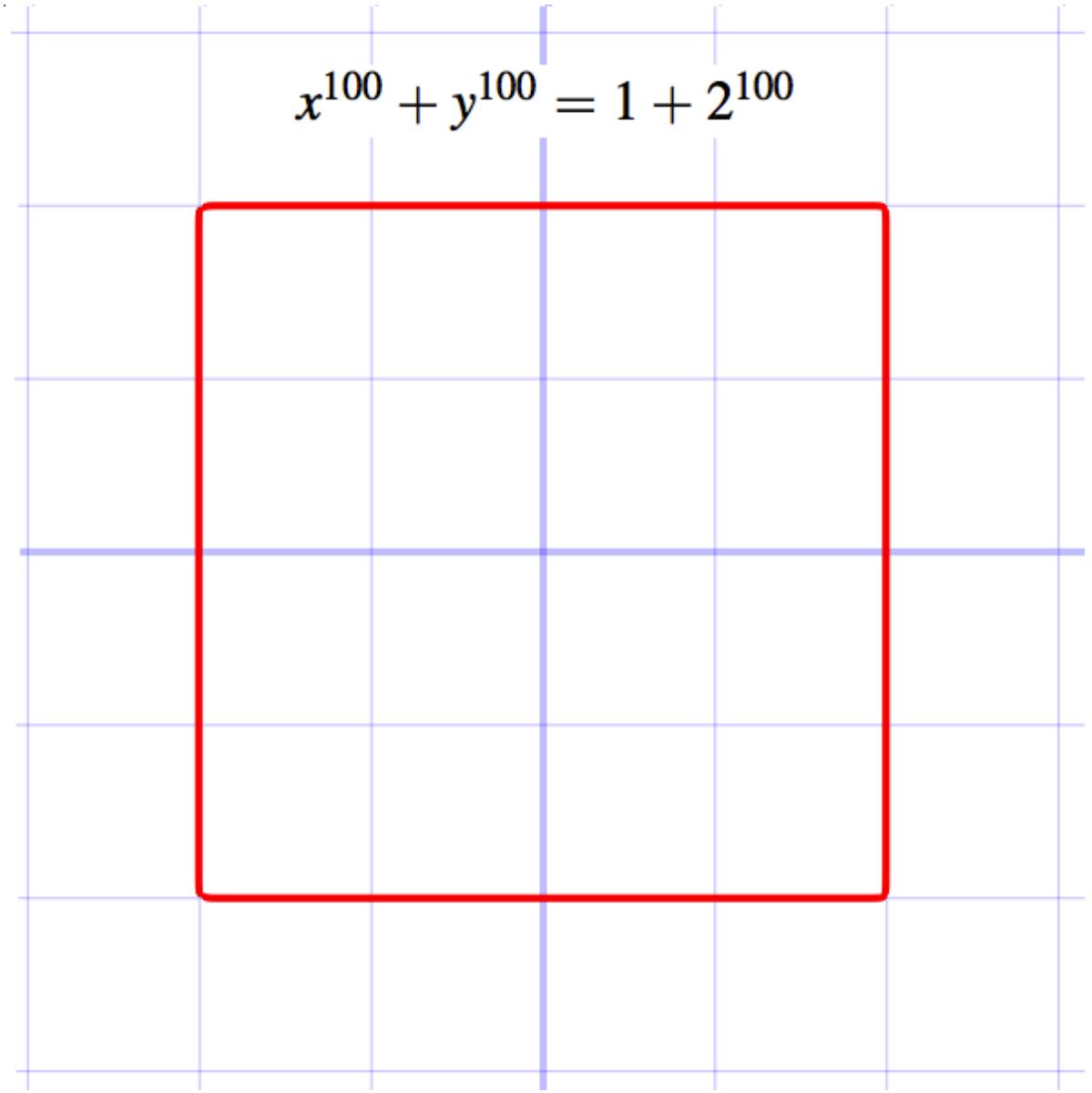


Leminscate

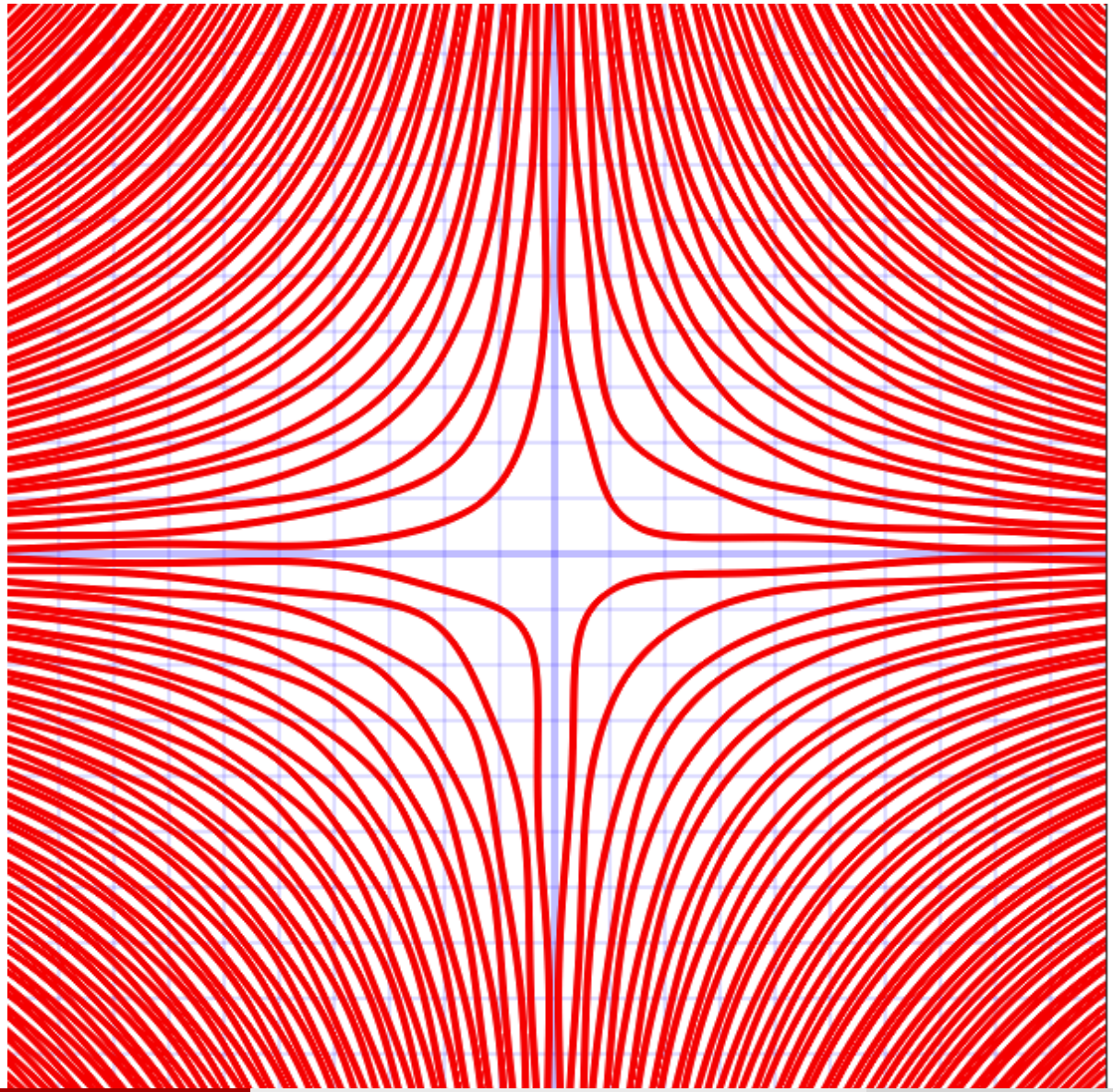


conchoid of Nicomedes



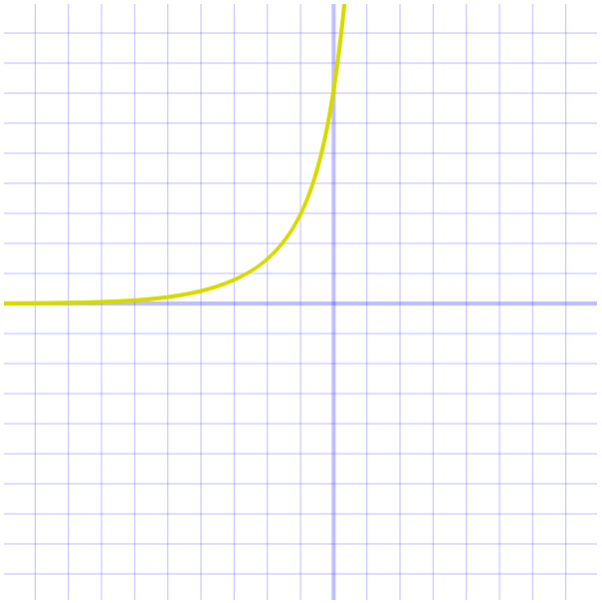

$x^{100} + y^{100} = 1 + 2^{100}$

$$\sin(x - y) - 2\cos((\pi/2)xy) = 0$$

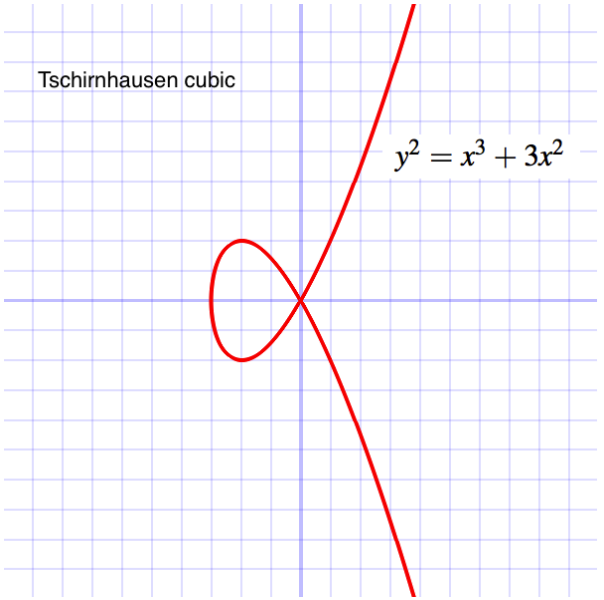


Is y a function of x?

a) $y = e^x(x^2 + 7)$

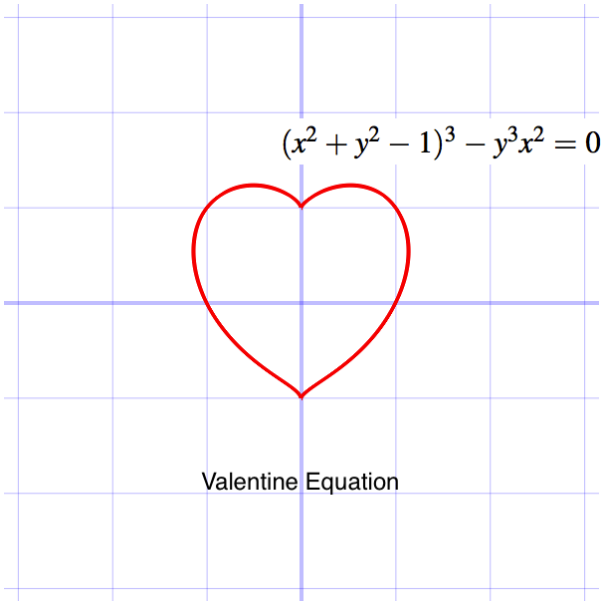


b) $y^2 = x^3 + 3x^2$



c)

$(x^2 + y^2 - 1)^3 - y^3x^2 = 0$



Section Assignment #7

Work with a partner and turn in one paper per pair at the end of class.

Find $\frac{dy}{dx}$ for the curve $(x-y)^2 = x + y - 1$.