MAT232H F21 - TT1 Solutions - Q2

Version 1

Part A

$$x = t + 1/t \qquad y = t - 1/t$$

$$x^2 = (t + 1/t)^2 \qquad y^2 = (t - 1/t)^2$$

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

So $x^2 = t^2 + 2 + \frac{1}{t^2}$

$-)\ y^2 = t^2 - 2 + \frac{1}{t^2}$

$$x^2 - y^2 = 4$$

hyperbola