

MATE 2410 Geometría Diferencial 1
Curvas Importantes

Prof. José Ricardo ARTEAGA

- 1.
- La bruja de Agnesi.**

$$W(t) = (2a \tan t, 2a \cos^2 t)$$

- 2.
- Espiral**
- logarítmica.

$$\alpha(t) = (e^{bt} \cos t, e^{bt} \sin t) \quad \kappa = \frac{1}{bs}$$

- 3.
- Cicloide.**

$$\alpha(t) = (A + a(t - \sin t), B - a(1 - \cos t))$$

- 4.
- Astroide.**

$$\alpha(t) = (a \cos^3 t, a \sin^3 t), \quad \alpha(t) = (a \cos^n t, a \sin^n t)$$

- 5.
- Catenaria.**

$$y = c \cosh(x/c) \quad \alpha(t) = (t, \cosh(\frac{t}{c})), \quad \alpha(t) = (\cosh(\frac{t}{c}), t) \quad \kappa = \frac{-c}{c^2 + s^2}$$

- 6.
- Tractriz.**

$$\alpha(t) = a \left(\sin t, \cos t + \ln(\tan(\frac{t}{2})) \right)$$

- 7.
- Cardiodes.**

$$\alpha(t) = (2a \cos t(1 + \cos t), 2a \sin t(1 + \cos t))$$

- 8.
- Lemniscatas**
- de Bernoulli.

$$\alpha(t) = \left(\frac{a \cos t}{1 + \sin^2 t}, \frac{a \sin t \cos t}{1 + \sin^2 t} \right)$$

- 9.
- Cisoide**
- de Diocles.

$$\alpha(t) = \left(\frac{2at^2}{1 + t^2}, \frac{2at^3}{1 + t^2} \right)$$

- 10.
- Lissajous.**

$$\alpha(t) = (a \sin(nt + d), b \sin t)$$

- 11.
- Limacon.**

$$\alpha(t) = (2a \cos t + b) (\cos t, \sin t)$$

12. Curva misteriosa

$$\alpha(t) = \left(\frac{1}{\sqrt{2}} \cos t, \sin t, \frac{1}{\sqrt{2}} \cos t \right)$$

- 13.
- Hélice.**

$$\alpha(t) = (a \cos t, a \sin t, bt)$$

14. Curva de
- Viviani.**

$$\alpha(t) = (a(1 + \cos t), a \sin t, 2a \sin(\frac{t}{2}))$$