



Lettere greche

α	β	γ	δ
ε	ζ	η	θ
ι	κ	λ	ν
ξ	π	ρ	σ
τ	υ	φ	χ
ψ	ω		

Simboli matematici

1/2	2	3	√
i	e	ħ	∈
∃	∅	⇒	∞
∠	▶	▶	∧
∨	∇	∧	∇
±	∓	∓	∪

Grafico usando Draw

2D
3D
Espressione
Implicit Plot
Parametric Plot
Points
Diagram title

```
(%i1) (y-(x-a)^2)·(x-a-1);
(%o1) (x-a-1)(y-(x-a)^2)

(%i2) expand(%);
(%o2) xy-ay-y-x^3+3ax^2+x^2-3a^2x-2ax+a^3+a^2

(%i3) diff(%o2,a,1);
(%o3) -y+3x^2-6ax-2x+3a^2+2a

(%i4) divide(%o2,%o3,a);
(%o4) [ -((3x)+3a+1)/9, -((a(6y+2)+(8-6x)y-2x)/9) ]

(%i5) a·(6·y+2)+(8-6·x)·y-2·x;
(%o5) a(6y+2)+(8-6x)y-2x

(%i6) divide(%o3,%o5,a);
(%o6) [ (a(9y+3)+(-9x)-6)y-3x+2 / (18y^2+12y+2), (9y^3-18y^2+9y) / (9y^2+6y+1) ]

(%i7) 9·y^3-18·y^2+9·y;
(%o7) 9y^3-18y^2+9y

(%i8) factor(%);
(%o8) 9(y-1)^2y

(%i9) 9·y^2+6·y+1;
(%o9) 9y^2+6y+1

(%i10) factor(%);
```

Cronolo... x

wxplot2d([%
16*y^3-24*
wxplot2d([%
16*y^3-24*
factor(%o17
(16*y^3-24*
factor());
divide(%o12
u*(4*y-2)+3
divide(%o11
-6*u^2+2*y
-2*u^3+u*(2

Somma... x



Algebra

Tools

Table

Spreadsheet

$a = 1.2$

-5 5

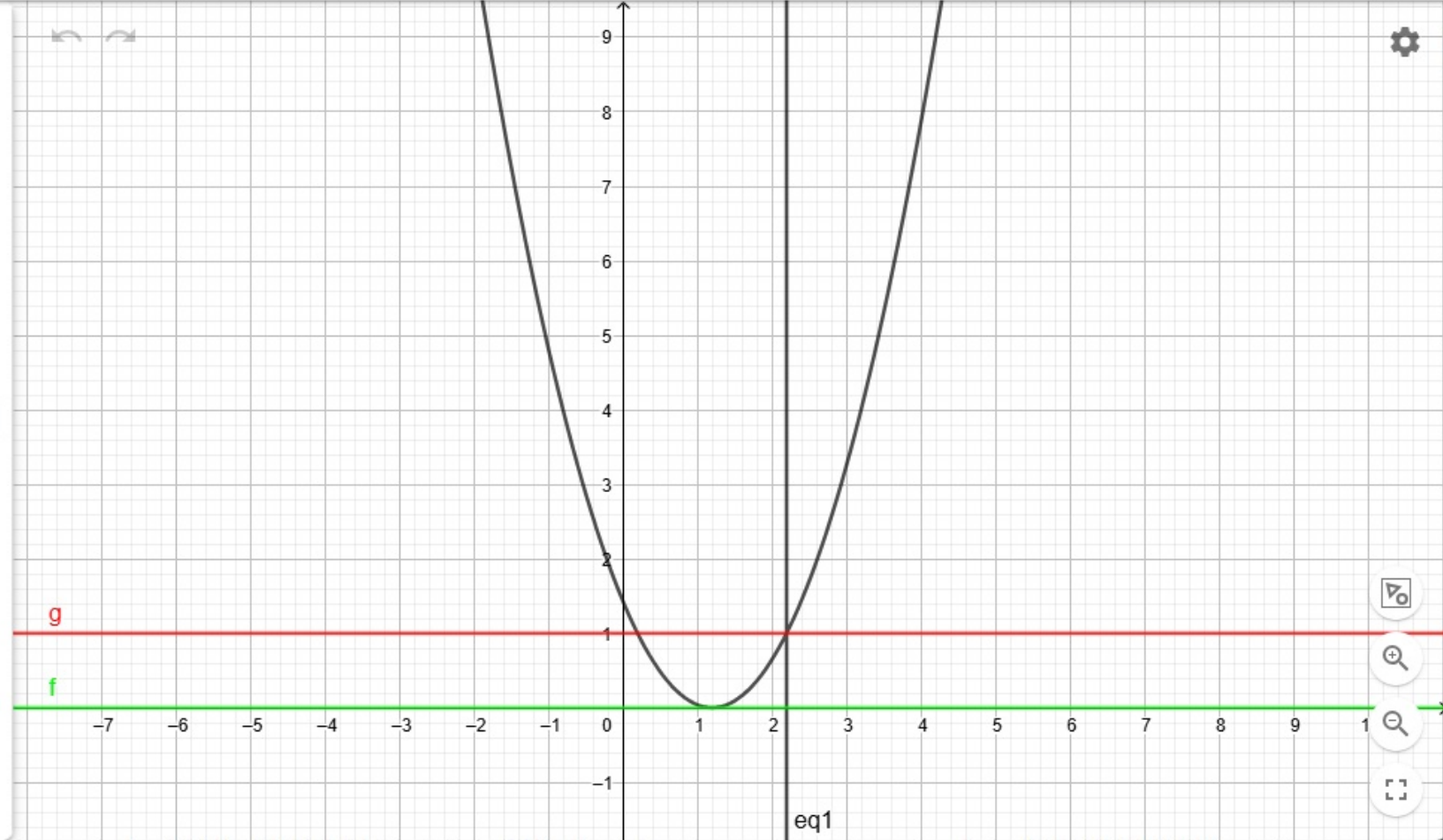
eq1: $(y - (x - a)^2)(x - a - 1) = 0$

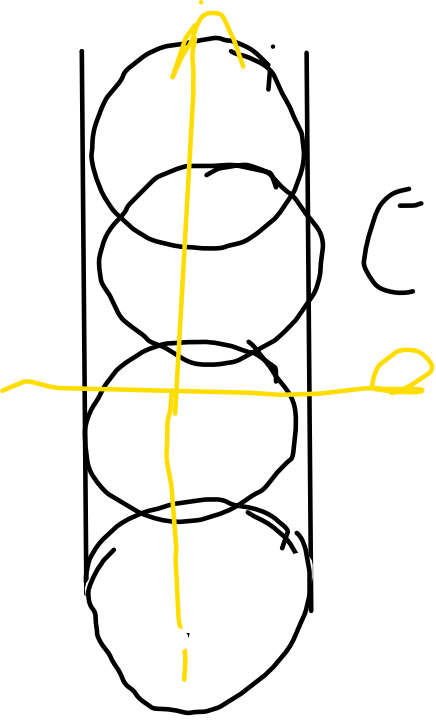
f: $y = 0$

g: $y = 1$

+ Input...

GeoGebra Calculator Suite





$$x^2 + (y-u)^2 = 1 \quad F = (u^2 - 2yu + x^2 + y^2 - 1) = 0$$

$$C: x^2 + y^2 - 2uy + u^2 - 1 = 0$$

$$F_u = 2u - 2y$$

~~$$y^2 - 2y^2 + x^2 + y^2 - 1 = 0$$~~

$$x^2 - 1 = 0$$

$$(x+1)(x-1) = 0$$

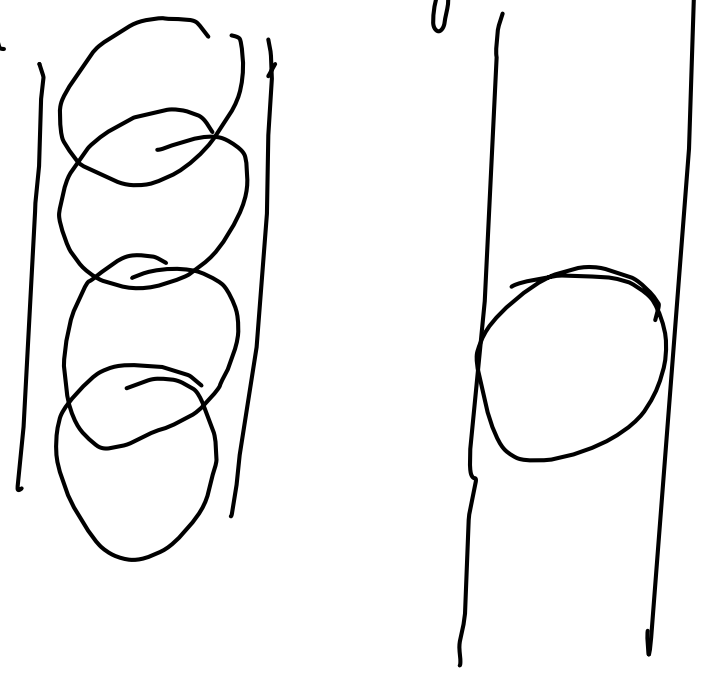
$$\begin{cases} F = 0 \\ F_u = 0 \\ F = 0 \\ u = y \end{cases}$$

$$C_u: x^2 + (y - u^2)^2 = 1$$

$$x^2 + y^2 - 2u^2y + u^4 = 1$$

$$u^4 - 2yu^2 + x^2 + y^2 - 1 = 0$$

$$F_u = 4u^3 - 4yu$$



$$\left. \begin{array}{l} F = 0 \\ F_u = 0 \end{array} \right\} \begin{array}{l} F = 0 \\ 4u(u^2 - y) = 0 \end{array}$$

$$\left. \begin{array}{l} F = 0 \\ u = 0 \end{array} \right\} F = 0$$

$$\left. \begin{array}{l} F = 0 \\ u^2 = y \end{array} \right\} F = 0$$

$$x^2 + y^2 - 1 = 0$$

$$x^2 + \cancel{y^2} - 2\cancel{y} + \cancel{u^4} - 1 = 0$$

$$x^2 - 1 = 0$$

$$C: y = x^2 \quad \left. \begin{array}{l} x = u \\ y = u^2 \end{array} \right\} P_u \equiv (u, u^2) \quad t_u: y - u^2 = 2u(x - u)$$

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

$$n_u: 1(x - u) + 2u(y - u^2) = 0$$

$$x - u + 2uy - 2u^3 = 0$$

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

$F =$

$$F_u = -6u^2 + 2y - 1$$

Resultante: $16y^3 - 24y^2 + 12y - 27x^2$

-2

(denom.: $2(2y - 1)^2$)

$$e: \begin{cases} x = u \\ y = u^2 \\ z = u^3 \end{cases}$$

$$x' = 1 \quad x'' = 0$$

$$y' = 2u \quad y'' = 2$$

$$z' = 3u^2 \quad z'' = 6u$$

$$O \equiv (0,0,0) \hookrightarrow u=0$$

~~$$t: \begin{cases} x = 0 \\ y = 0 \\ z = 0 \end{cases}$$~~

$$\begin{cases} y = 0 \\ z = 0 \end{cases}$$

$$\Pi_4: 1 \cdot (x-0) + 0 \cdot (y-0) + 0 \cdot (z-0) = 0$$

$$\boxed{x=0}$$

$$\Pi_0: \begin{array}{ccc|c} x & y & z & \\ \hline 1 & 0 & 0 & 0 \\ 0 & 2 & 0 & 0 \end{array}$$

$$= 0 \quad \left| \begin{array}{c} y \\ z \\ 0 \end{array} \right| = 0 \quad 2z = 0 \quad \boxed{z=0}$$

$$u: \begin{cases} x = 0 \\ z = 0 \end{cases}$$

~~$$g: \begin{cases} x = 0 \\ y = 0 \\ z = 0 \end{cases}$$~~

$$\begin{cases} x = 0 \\ y = 0 \end{cases}$$

$$\Pi_2: 0 \cdot (x-0) + 1 \cdot (y-0) + 0 \cdot (z-0) = 0$$

$$\boxed{y=0}$$

$(- :) \begin{cases} x = u^2 \\ y = u^2 \\ z = u^3 \end{cases} \quad p. nsc. \quad \Pi_{osc}^0 \quad z = 0 \quad c, osc. \quad 14 \quad O \leftrightarrow u = 0$

$F: \quad g: \quad x^2 + y^2 + z^2 + ax + by + cz + d = 0$

$\Phi(u) = u^2 + u^4 + u^6 + au + bu^2 + cu^3 + d$

$\Phi'(u) = 2u + 4u^3 + 6u^5 + a + 2bu + 3cu^2$

$\Phi''(u) = 2 + 12u^2 + 30u^4 + 2b + 6cu$

$u = 0$
 $\left. \begin{matrix} \Phi(0) = 0 \\ \Phi'(0) = 0 \\ \Phi''(0) = 0 \end{matrix} \right\} \begin{matrix} d = 0 \\ a = 0 \\ 2 + 2b = 0 \end{matrix}$

$g_{osc}: \quad x^2 + y^2 + z^2 - y + kz = 0$
 $C_k = (0, \frac{1}{2}, 1 - \frac{k}{2})$ impoango $C_k \in \Pi_{osc}$
 $\Rightarrow k = 0 \quad \overline{g}: \quad x^2 + y^2 + z^2 - y = 0 \quad R = \frac{1}{2} \quad \mathcal{R} = z$

$\left. \begin{matrix} a = 0 \\ b = -1 \\ c = k \\ d = 0 \end{matrix} \right\}$