

PRÁCTICA 1.2 Representación mediante puntos de una función matemática

$$f(x) = e^{-x} \cos(2\pi x) \quad 0 \leq x \leq 4$$

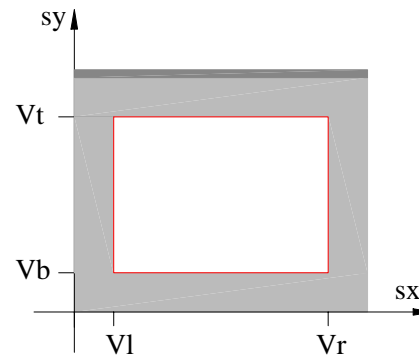
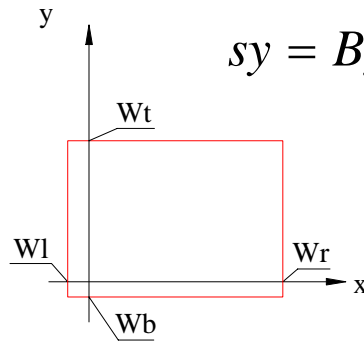
El valor de $f(x)$ varía entre -1.0 y 1.0

$$sx = Ax + C$$

$$sy = By + D$$

$$Wl = 0; Wr = 4$$

$$Wb = -1; Wt = 1$$



$$A = \frac{Vr - Vl}{Wr - Wl} \quad y \quad C = Vl - AWl \quad Vr - Vl = \text{Ancho pantalla}$$

$$B = \frac{Vt - Vb}{Wt - Wb} \quad y \quad D = Vb - BWb \quad Vt - Vb = \text{Alto pantalla}$$

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$$W_l = 0; W_r = 4$$

$$W_b = -1; W_t = 1$$

$$V_r - V_l = \text{Ancho pantalla}$$

$$V_t - V_b = \text{Alto pantalla}$$

$$A = \frac{V_r - V_l}{W_r - W_l} = \frac{\text{Ancho_pantalla}}{4} \quad y \quad C = V_l - A W_l = 0$$

$$B = \frac{V_t - V_b}{W_t - W_b} = \frac{\text{Alto_Pantalla}}{2} \quad y \quad D = V_b - B W_b = \frac{\text{Alto_Pantalla}}{2}$$

$$sx = Ax + C$$

$$sy = By + D$$

```
for (GLdouble x =0; x < 4.0 ; x += 0.0001)
```

```
{
```

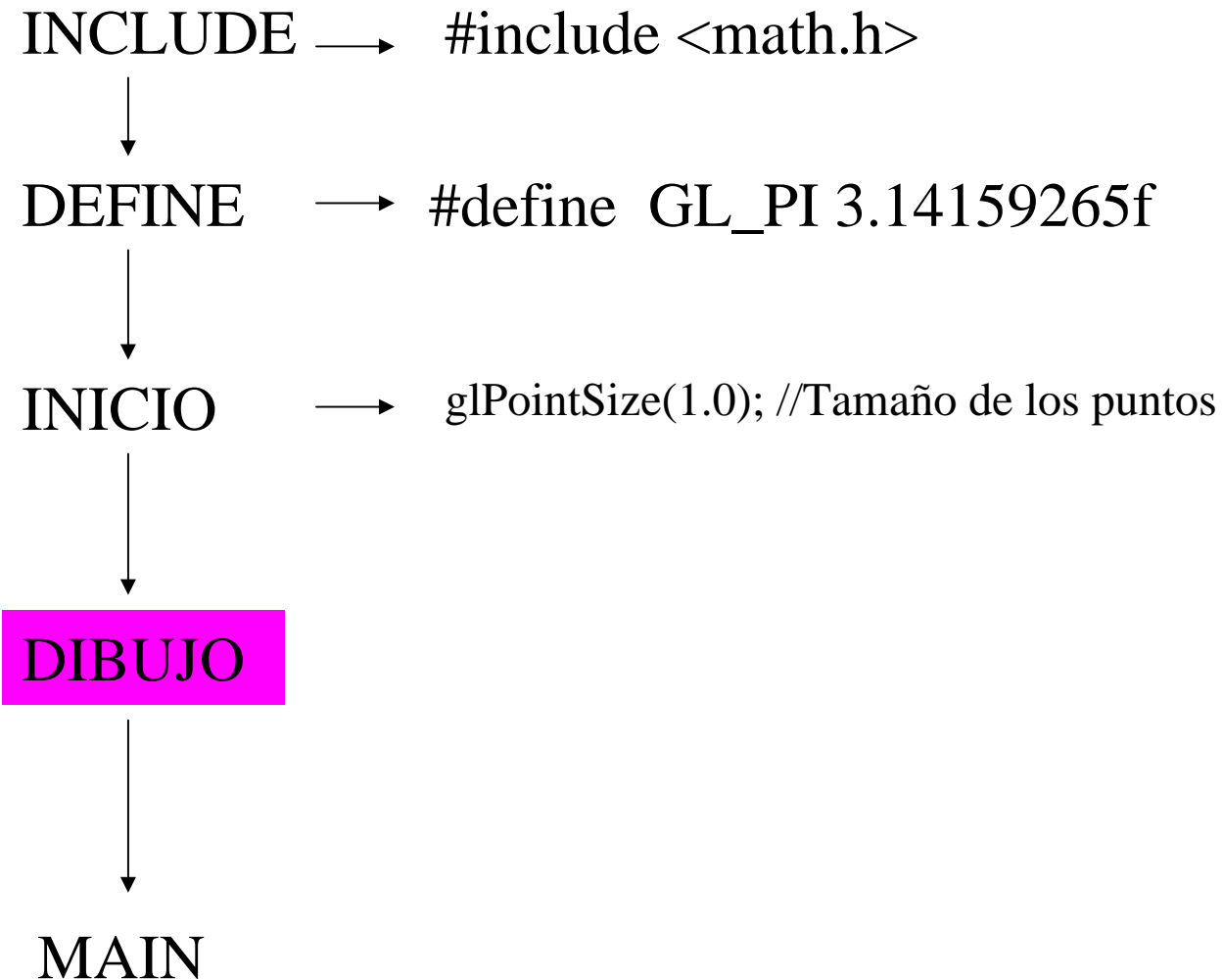
```
    GLdouble y = exp(-x) * cos(2*GL_PI * x);
```

```
    SX=A * x + C;
```

```
    SY=B * y +D;
```

```
    glVertex2d(SX, SY);
```

```
}
```



```

void mi_Dibujo(void)
{
    double Sx,Sy;
    glClear(GL_COLOR_BUFFER_BIT); //Limpia la pantalla
    glBegin(GL_POINTS);
    glColor3f(1.0f, 0.0f, 0.0f); //El color a dibujar

    //
    for (GLdouble x =0; x < 4.0 ; x += 0.0001)
    {
        GLdouble y = exp(-x) * cos(2*GL_PI * x);
        Sx = (An/4.0)*x;
        Sy = (Al/3.0)*y + (Al*1.5)/3.0;
        glVertex2d(Sx, Sy);
    }
    glEnd();

    //Dibuja el rectángulo
    //Dibuja el eje x

```