

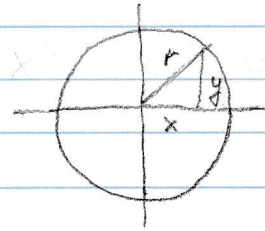
Graphics Lesson #1a

Dots

- 1) modify the program, point.c, to draw a random dot.
- 2) draw dots with random color and random position.
- 3) fill entire window with "TV" static in greyscale.
- 4) animate the previous program
- 5) generate random dots but only draw ones that are inside circle.

use implicit formula:

$$x^2 + y^2 = r^2$$



- 6) fill in every pixel in window with solid color
- 7) fill in every pixel with random color
- 8) fill in every pixel with gradient from top to bottom or left to right.
- 9) write program to draw "Hofstadter" fractal. Refer to resource .pdf
- 10) write program to draw mandelbrot set (Resources)
- 11) write program to draw Sierpinski gasket (Resources)
- 12) write program to draw Bifurcation plot (Resources)
- 13) write program to draw Lorenz attractor (Resources)

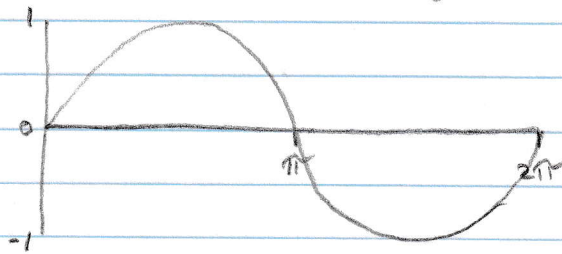
Graphics Lesson 16

Dots (continued)

- 14) write program to draw x^2 , 2^x , $\log(x)$, \exp functions
- 15) write program to draw $\sin()$, $\cos()$ functions
- 16) modify one of your programs to extend it, i.e. animate it, enable mouse clicking to zoom in, add randomness ... anything you want ...

hint for #15:

$$y = \sin(\text{angle});$$



```
for (int x = 0 ; x < 400 ; x++)  
{  
    float angle = (x/400.0) * 2 * PI ;  
    float y = sin(angle);  
    ;  
}
```