

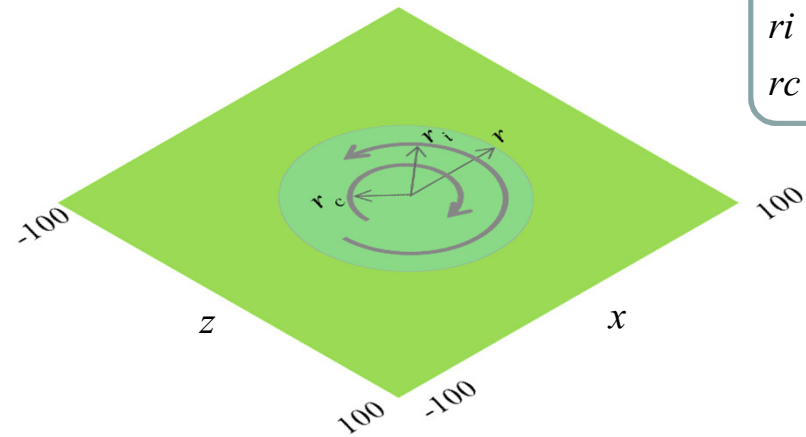
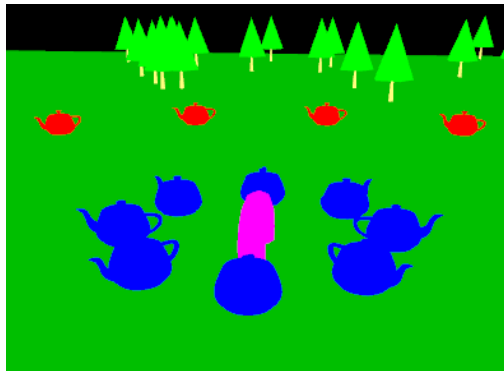
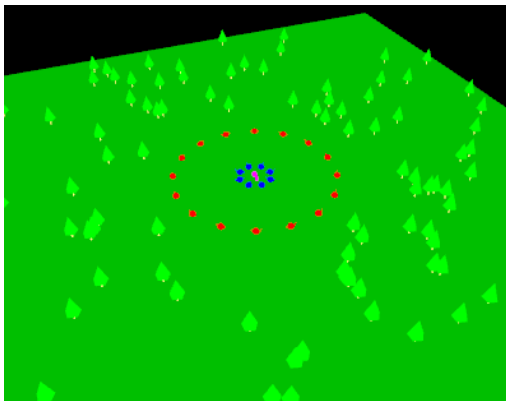


## Transformações Geométricas

Construção de um cenário 3D

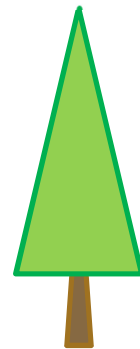


# Cenário 3D



$$\begin{aligned} r &= 50 \\ r_i &= 35 \\ r_c &= 15 \end{aligned}$$

$$\begin{aligned} x &= r \cos(\alpha) \\ z &= r \sin(\alpha) \end{aligned}$$





# Cenário 3D

- Funções Necessárias

```
(stdlib.h)
void srand(int semente); // inicia sequência de números aleatórios
int rand(void); // devolve número entre 0 e RAND_MAX

void glTranslatef(float x, float y, float z);
void glRotatef(float ang, float x, float y, float z); // ang em graus

void glPushMatrix(void);
void glPopMatrix(void);

void glutSolidCone(float raioBase, float altura, int fatias, int camadas);
void glutSolidTorus(float raioInt, float raioExt, int numLados, int aneis);
void glutSolidTeapot(float dimensao);

glBegin(GL_TRIANGLES);
    glVertex3f(...);
    ...
glEnd();
```

