

# Computação Gráfica

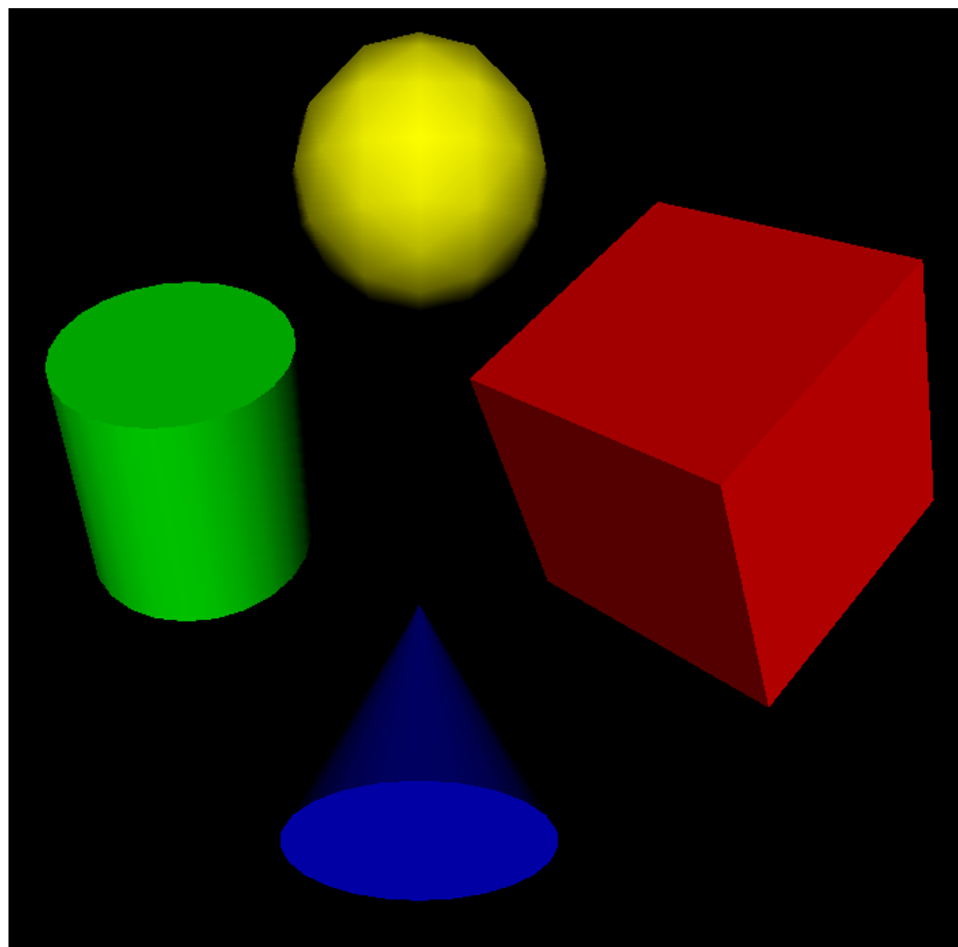
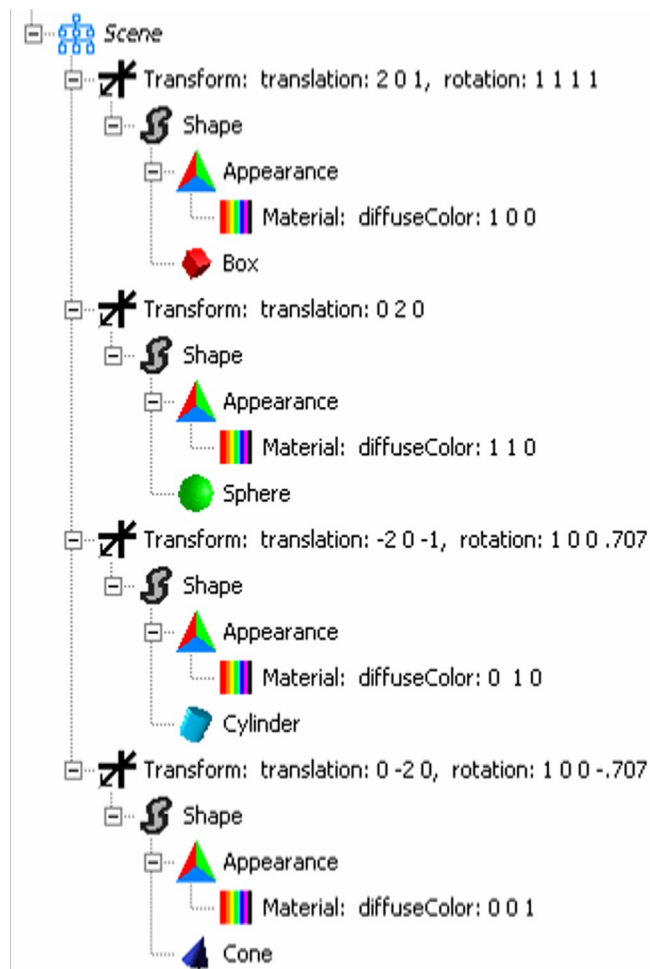
Aula 14: Primitivas 3D

Kahoot

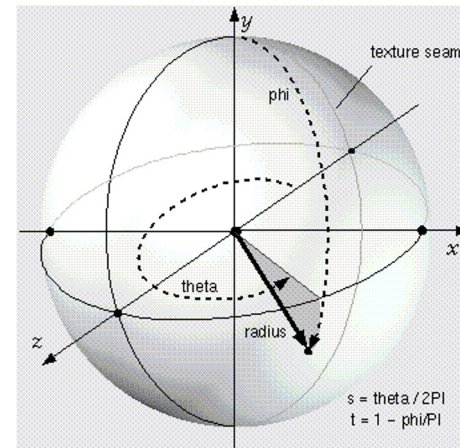
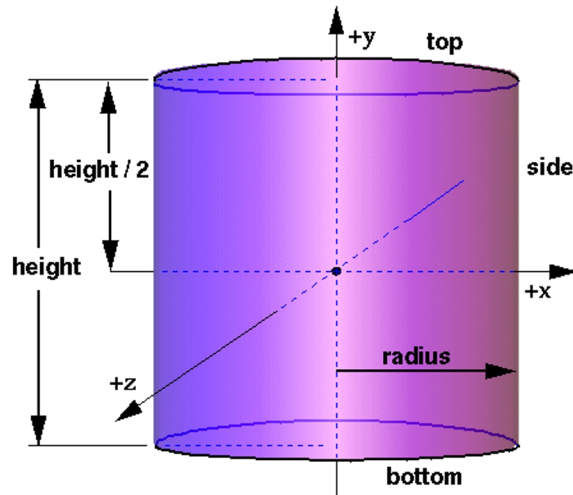
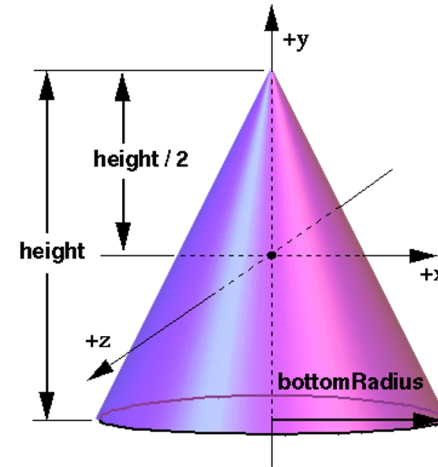
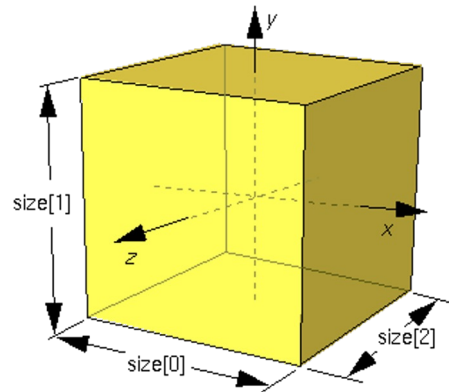
# Kahoot!

Entrar em Kahoot.it : <https://kahoot.it/>

# Formas e Transformações (X3D-Edit)

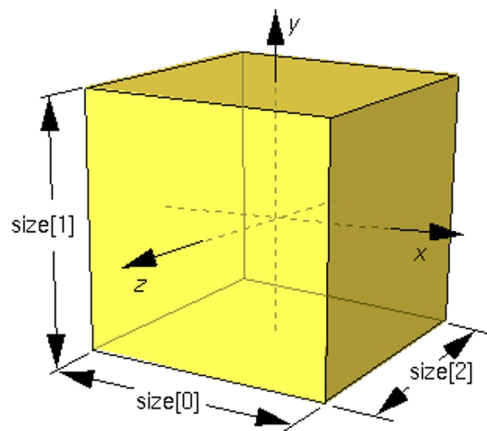


# Especificação de algumas primitivas



# Box

O nó **Box** especifica uma caixa 3D paralelepípeda retangular centrada no (0, 0, 0) no sistema de coordenadas local e alinhado com os eixos de coordenadas locais. Por padrão, a caixa mede 2 unidades em cada dimensão, de -1 a +1. O campo **size** especifica as extensões da caixa ao longo dos eixos X, Y e Z, respectivamente, e cada valor do tamanho deve ser maior que zero.



```
Box : X3DGeometryNode {  
  SFNode      [in,out]  metadata  NULL    [X3DMetadataObject]  
  SFVec3f      []        size      2 2 2    (0,∞)  
  SFBool       []        solid     TRUE  
}
```

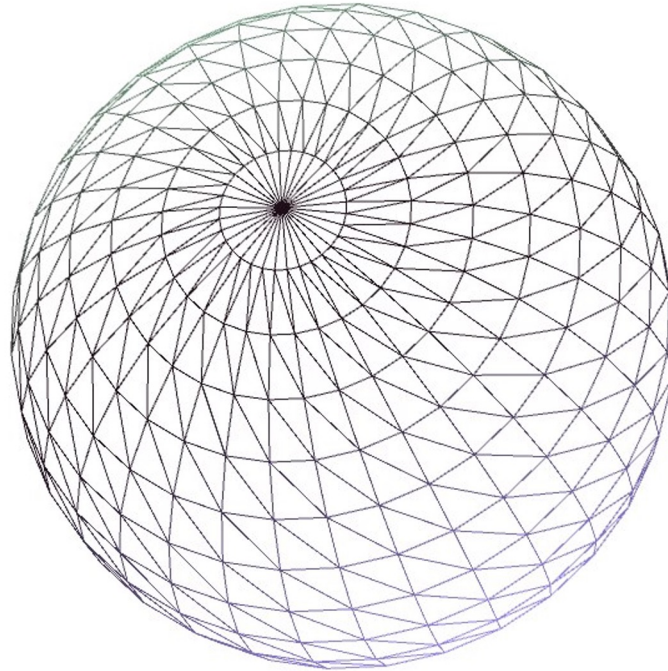
# Geração de Esferas em 3D

Você é capaz de gerar um esfera 3D composta por vértices e arestas? Qual seria a sua técnica?

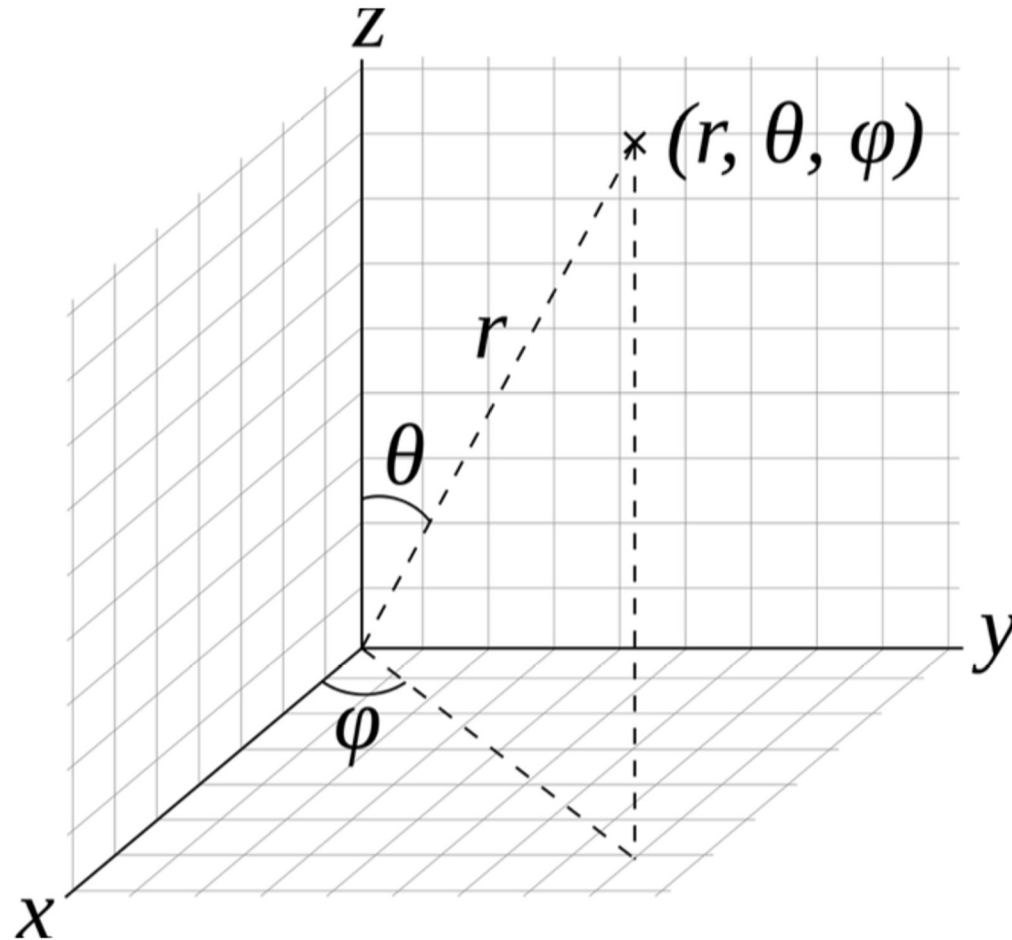


# Geração de Esferas em 3D

Você é capaz de gerar um esfera 3D composta por vértices e arestas? Qual seria a sua técnica?



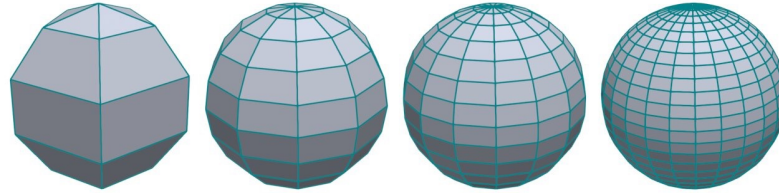
# Revisão de Coordenadas Esféricas



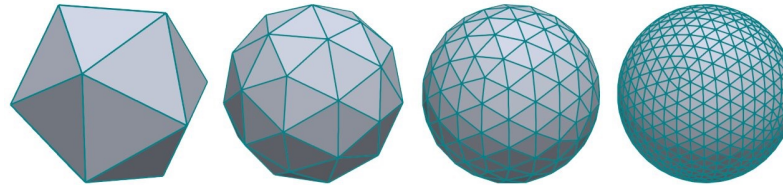


# Mais malhas de esferas

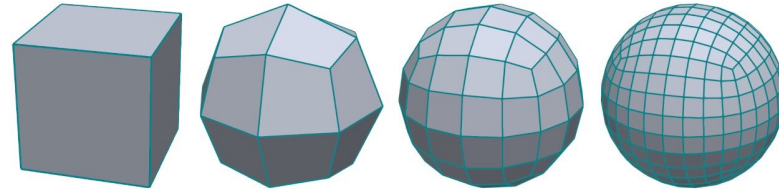
- UV sphere



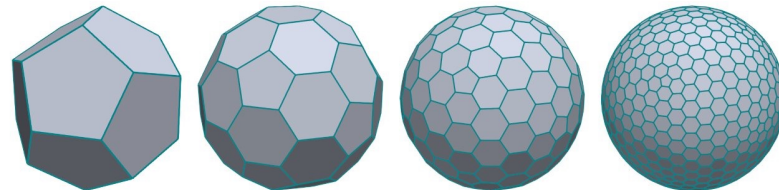
- Icosphere



- Quad sphere



- Goldberg polyhedra



# Especificação das primitivas

```
Box : X3DGeometryNode {  
  SFNode [in,out] metadata NULL [X3DMetadataObject]  
  SFVec3f []      size    2 2 2 (0,∞)  
  SFBool []       solid   TRUE  
}
```

```
Cylinder : X3DGeometryNode {  
  SFNode [in,out] metadata NULL [X3DMetadataObject]  
  SFBool []      bottom   TRUE  
  SFFloat []     height   2  (0,∞)  
  SFFloat []     radius   1  (0,∞)  
  SFBool []      side     TRUE  
  SFBool []      solid    TRUE  
  SFBool []      top      TRUE  
}
```

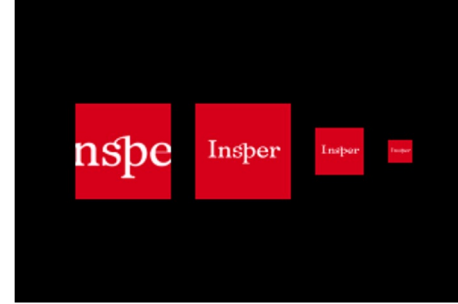
```
Cone : X3DGeometryNode {  
  SFNode [in,out] metadata NULL [X3DMetadataObject]  
  SFBool []      bottom   TRUE  
  SFFloat []     bottomRadius 1  (0,∞)  
  SFFloat []     height    2  (0,∞)  
  SFBool []      side     TRUE  
  SFBool []      solid    TRUE  
}
```

```
Sphere : X3DGeometryNode {  
  SFNode [in,out] metadata NULL [X3DMetadataObject]  
  SFFloat []     radius   1  (0,∞)  
  SFBool []      solid    TRUE  
}
```

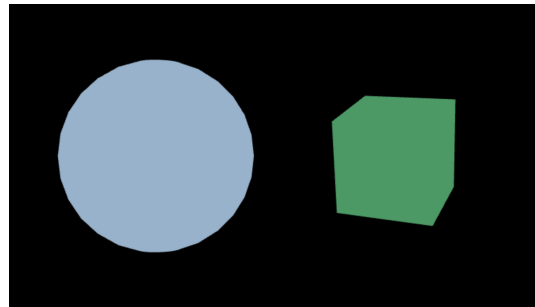
# Quinta parte do projeto 1



textura.x3d



texturas.x3d



primitivas.x3d

<https://lpsoares.github.io/Renderizador/>

# Computação Gráfica

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