

Please put a check mark next to each topic which you feel you understand.

Displays

CRTs
LCDs
Pixel
FrameBuffer
Raster scan vs. vector scan
Gamma, gamma correction

OpenGL ambient+diffuse+specular lighting model
Phong specular reflection vs. Phong shading
Gouraud vs Phong shading
BRDFs
Vertex and fragment shaders

Modeling

Polygonal meshes
Convex vs concave polygons
Testing convexity
Polygon boundaries
Does a line have area?
Bezier Curves
B-Splines
NURBS

2D Transformations

Vector representation of a point
Matrix translation, rotation, scaling
Homogeneous coordinates
Composing a string of transformations
Concept of changing coordinate systems

3D Transformation

3D rotation around a line as $R_x R_y R_z$
Matrix translation, rotation, scaling
Matrix stacks
Object coordinates vs world coordinates
Modelview matrix
Camera transform duality with object transform
Hierarchical transforms

Viewing and Perspective

Pin-hole Camera
Orthographic vs perspective
World coordinates vs screen coordinates
View frustum
Near and far clipping planes
Oblique parallel projection
Oblique perspective projection
Viewing pipeline object/world/normalized/ screen

Visibility

Back face detection
Painter's Algorithm
Z-buffer (Depth-buffer)
BSP trees
Screen space sort vs object space sort

Image warping, textures

Concept of UV coordinates
Texture/object/screen space
Bump mapping
Environment mapping
Mipmaps
Summed-area-tables
Perlin noise
Anti-aliasing

Illumination, shading

Color models

Electromagnetic spectrum

CIE chromaticity diagram

RGB space

CMYK space

HSV space

Raytracing

Eye rays

Shadow rays

Reflected/refracted rays

Anti-aliasing by supersampling

Intersection tests

Distributed ray tracing for estimating integrals

Oct-trees