

Intro to Graphics3D

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Graphics Review

```
Graphics[{
  {Blue, Thick, Line[{{-5, -5}, {5, 5}, {5, 1}}]}
], Axes → True, ImageSize → 150]
```

?Line

```
Graphics[{
  {Blue, Thick, Line[{{-5, -5}, {5, 5}, {5, 1}}]},
  {Red, Circle[{2, 2}, 1]}
], Axes → True, ImageSize → 150]
```

```
Graphics[{
  {Blue, Thick, Line[{{-5, -5}, {5, 5}, {5, 1}}]},
  {Red, Disk[{2, 2}, 1]}
], Axes → True, ImageSize → 150]
```

```
Graphics[{
  {Blue, Thick, Line[{{-5, -5}, {5, 5}, {5, 1}}]},
  {Red, Disk[{2, 2}, 1]},
  {Orange, Polygon[{{-2, 3}, {0, -4}, {3, 0}}]}
], Axes → True, ImageSize → 150]
```

```
Graphics[{
  {Blue, Thick, Line[{{-5, -5}, {5, 5}, {5, 1}}]},
  {Red, Disk[{2, 2}, 1]},
  {Orange, Opacity[0.5], Polygon[{{-2, 3}, {0, -4}, {3, 0}}]},
  {Darker[Green, 0.3], Rectangle[{-4, 1}, {0, 2}]}
], Axes → True, ImageSize → 150]
```

```
Graphics[{
  {Blue, Thick, Line[{{-5, -5}, {5, 5}, {5, 1}}]},
  {Red, Disk[{2, 2}, 1]},
  {Orange, Opacity[0.5], Polygon[{{-2, 3}, {0, -4}, {3, 0}}]},
  {Darker[Green, 0.3], Rectangle[{-4, 1}, {0, 2}]},
  {Purple, Text[Style["Sample", 20, Bold, FontFamily → "Arial"], {2, -2}]}
], Axes → True, ImageSize → 150]
```

Graphics3D

```
Graphics3D[{
  }, ImageSize → 150]
```

```
Graphics3D[{
  {Blue, Point[{1, 2, 3}]}
}, Axes → True, AxesEdge → {{-1, -1}, {-1, -1}, {-1, -1}},
PlotRange → 5, AxesLabel → {"x", "y", "z"}, ImageSize → 150, Boxed → False]
```

```
Graphics3D[{
  {Blue, Point[{1, 2, 3}]},
  {Brown, Thick, Dashing[Small], Line[{{0, 0, 0}, {5, 5, 5}, {2, 5, 2}]}]}
},
Axes → True, AxesEdge → {{-1, -1}, {-1, -1}, {-1, -1}},
PlotRange → 5, AxesLabel → {"x", "y", "z"}, ImageSize → 200, Boxed → False]
```

```
Graphics3D[{
  {Blue, Point[{1, 2, 3}]},
  {Brown, Thick, Dashing[Small], Line[{{0, 0, 0}, {5, 5, 5}, {2, 5, 2}]}},
  {Red, Sphere[{2, 2, 2}, 1]}
},
Axes → True, AxesEdge → {{-1, -1}, {-1, -1}, {-1, -1}},
PlotRange → 5, AxesLabel → {"x", "y", "z"}, ImageSize → 200, Boxed → False]
```

```
Graphics3D[{
  {Blue, Point[{1, 2, 3}]},
  {Brown, Thick, Dashing[Small], Line[{{0, 0, 0}, {5, 5, 5}, {2, 5, 2}]}},
  {Red, Sphere[{2, 2, 2}, 1]},
  {Green, Opacity[0.5], Cuboid[{1, 2, 0}, {4, 3, 5}]}
},
Axes → True, AxesEdge → {{-1, -1}, {-1, -1}, {-1, -1}},
PlotRange → 5, AxesLabel → {"x", "y", "z"}, ImageSize → 200, Boxed → False]
```

```
Graphics3D[{
  {Blue, Point[{1, 2, 3}]},
  {Brown, Thick, Dashing[Small], Line[{{0, 0, 0}, {5, 5, 5}, {2, 5, 2}]}},
  {Red, Sphere[{2, 2, 2}, 1]},
  {Green, Opacity[0.5], Cuboid[{1, 2, 0}, {4, 3, 5}]},
  {Orange, Cylinder[{{0, 0, 0}, {3, 1, 5}], 1/2]}
},
Axes → True, AxesEdge → {{-1, -1}, {-1, -1}, {-1, -1}},
PlotRange → 6, AxesLabel → {"x", "y", "z"}, ImageSize → 200, Boxed → False]
```

?Cylinder

```
Graphics3D[{
  {Blue, Point[{1, 2, 3}]},
  {Brown, Thick, Dashing[Small], Line[{{0, 0, 0}, {5, 5, 5}, {2, 5, 2}]}},
  {Red, Sphere[{2, 2, 2}, 1]},
  {Green, Opacity[0.5], Cuboid[{1, 2, 0}, {4, 3, 5}]},
  {Orange, Cylinder[{{0, 0, 0}, {3, 1, 5}], 1/2]},
  {Purple, Polygon[{{-1, -2, -3}, {0, -4, -1}, {-3, -3, -3}, {0, 0, 0}]}]}
},
Axes → True, AxesEdge → {{-1, -1}, {-1, -1}, {-1, -1}},
PlotRange → 6, AxesLabel → {"x", "y", "z"}, ImageSize → 200, Boxed → False]
```

```
Graphics3D[{
  {Blue, Point[{1, 2, 3}]},
  {Brown, Thick, Dashing[Small], Line[{{0, 0, 0}, {5, 5, 5}, {2, 5, 2}]},
  {Red, Sphere[{2, 2, 2}, 1]},
  {Green, Opacity[0.5], Cuboid[{1, 2, 0}, {4, 3, 5}]},
  {Orange, Cylinder[{{0, 0, 0}, {3, 1, 5}], 1/2]},
  {Purple, Polygon[{{-1, -2, -3}, {0, -4, -1}, {-3, -3, -3}, {0, 0, 0}]},
  {Text["Sample", {4, -2, -4}]}
},
Axes → True, AxesEdge → {{-1, -1}, {-1, -1}, {-1, -1}},
PlotRange → 6, AxesLabel → {"x", "y", "z"}, ImageSize → 200, Boxed → False]
```

Assignment

Create an image in 3D. Draw either a single object or a simple scene. You must include at least one of each of the following: Line, Sphere, Cuboid, Cylinder, Polygon, Point, Text. Use a variety of directives (colors, thickness, dashing, etc.) and options (PlotRange, Axes, etc.)

Making this a Manipulate is optional.