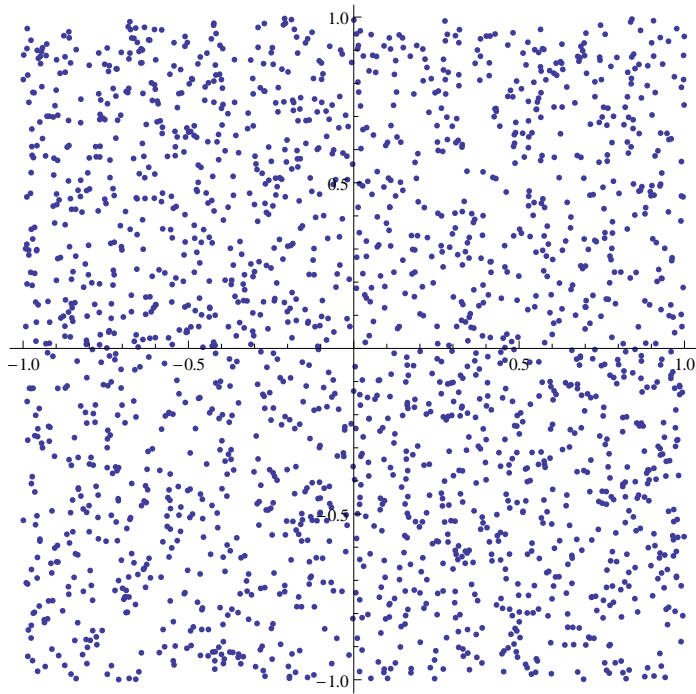


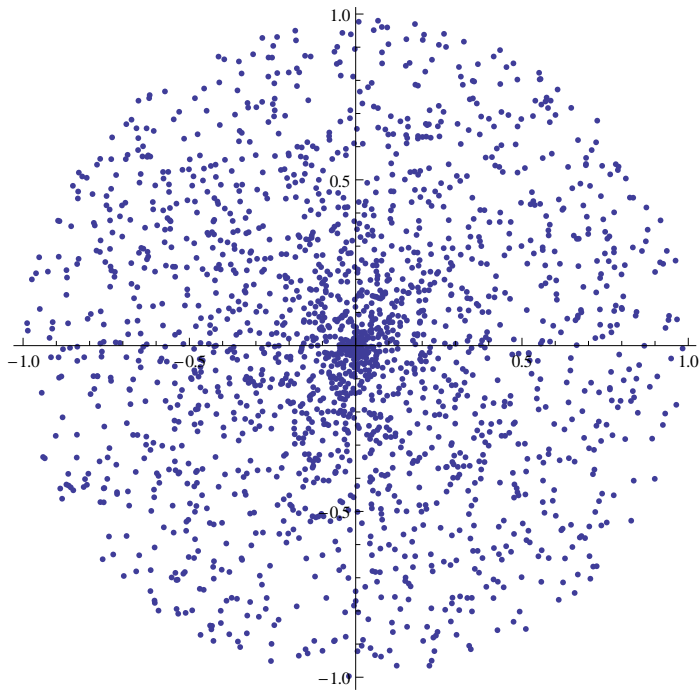
Flat variables: 2-d Cartesian vs. Polar

```
n = 2000;  
x = RandomReal[{-1, 1}, n]; y = RandomReal[{-1, 1}, n];  
xy = ListPlot[Transpose[{x, y}], AspectRatio -> 1]
```

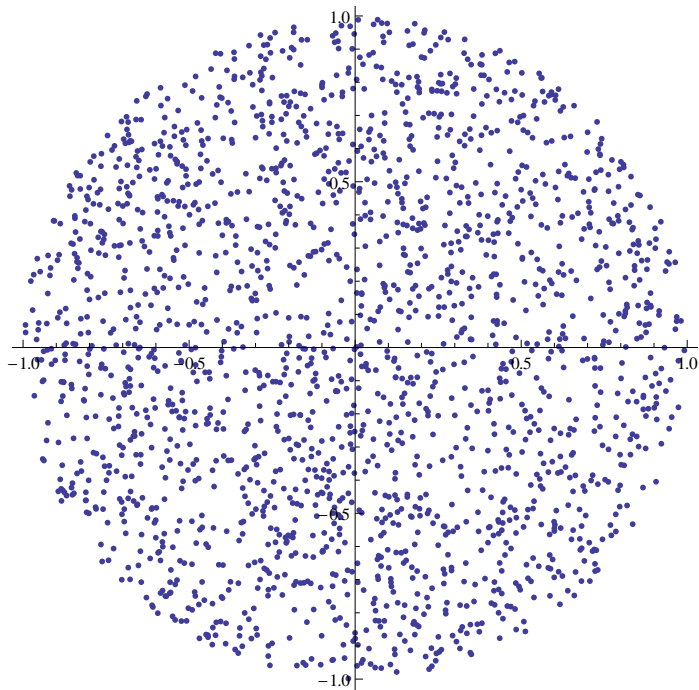


```
r = RandomReal[{0, 1}, n];  $\phi$  = RandomReal[{0, 2  $\pi$ }, n];
```

```
rφ = ListPlot [Transpose [ {r Cos[φ], r Sin[φ]} ], AspectRatio → 1]
```



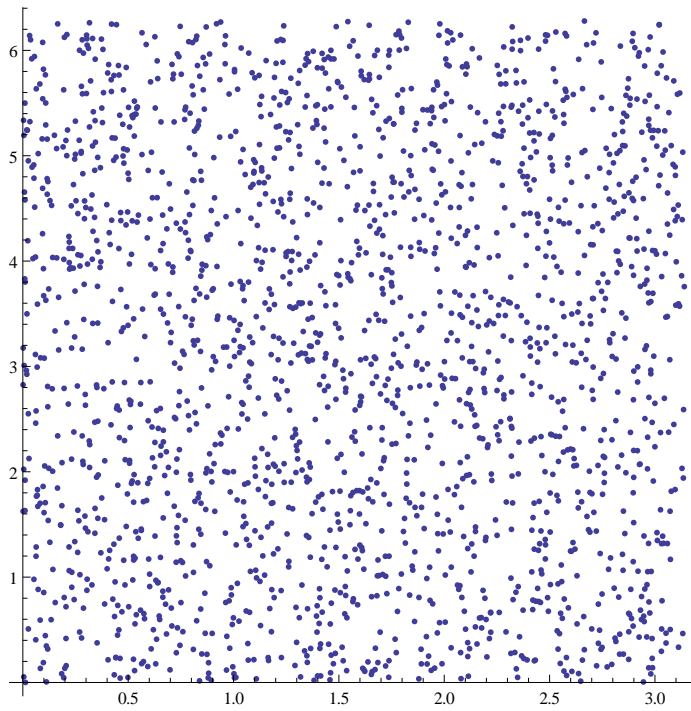
```
wrφ = ListPlot [Transpose [ {Sqrt[r] Cos[φ], Sqrt[r] Sin[φ]} ], AspectRatio → 1]
```



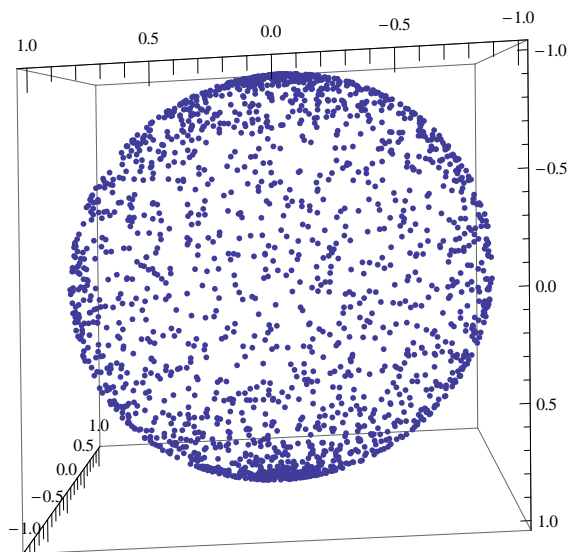
Flat variables: Spherical Polar

```
θ = RandomReal [ {0, π}, n ]; φ = RandomReal [ {0, 2 π}, n ];
```

```
 $\theta\phi = \text{ListPlot}[\text{Transpose}[\{\theta, \phi\}], \text{AspectRatio} \rightarrow 1]$ 
```



```
 $\theta\phi3 = \text{ListPointPlot3D}[\text{Transpose}[\{\text{Sin}[\theta] \text{Cos}[\phi], \text{Sin}[\theta] \text{Sin}[\phi], \text{Cos}[\theta]\}], \text{AspectRatio} \rightarrow 1]$ 
```



```
 $u = \text{RandomReal}[\{-1, 1\}, n];$ 
```

```
w0phi3 = ListPointPlot3D[Transpose[{Sqrt[1 - u^2] Cos[phi], Sqrt[1 - u^2] Sin[phi], u}], AspectRatio -> 1]
```

