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In[1]:= f[u_] := a Cos[u]
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```
In[2]:= g[u_] := Integrate[Sqrt[1 - a^2 Sin[t]^2], {t, 0, u}]
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```
In[3]:= g[u]
```

```
Out[3]= $Aborted
```

$$\int \sqrt{1 - a^2 \sin[t]^2} dt$$

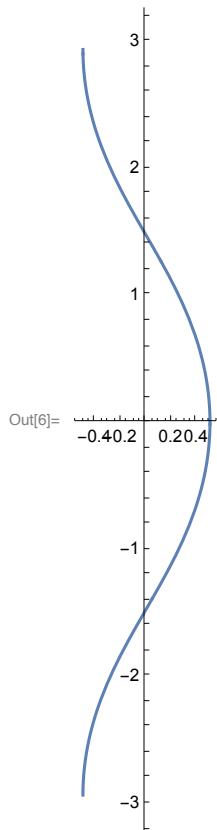
$$\text{EllipticE}[t, a^2]$$

```
In[4]:= g[u_] := EllipticE[u, a^2]
```

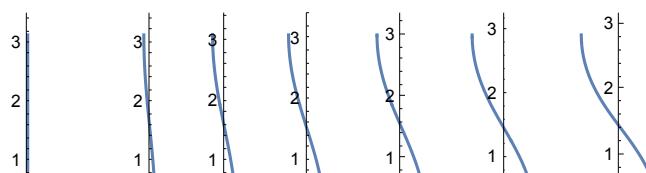
```
In[5]:= a = 1/2
```

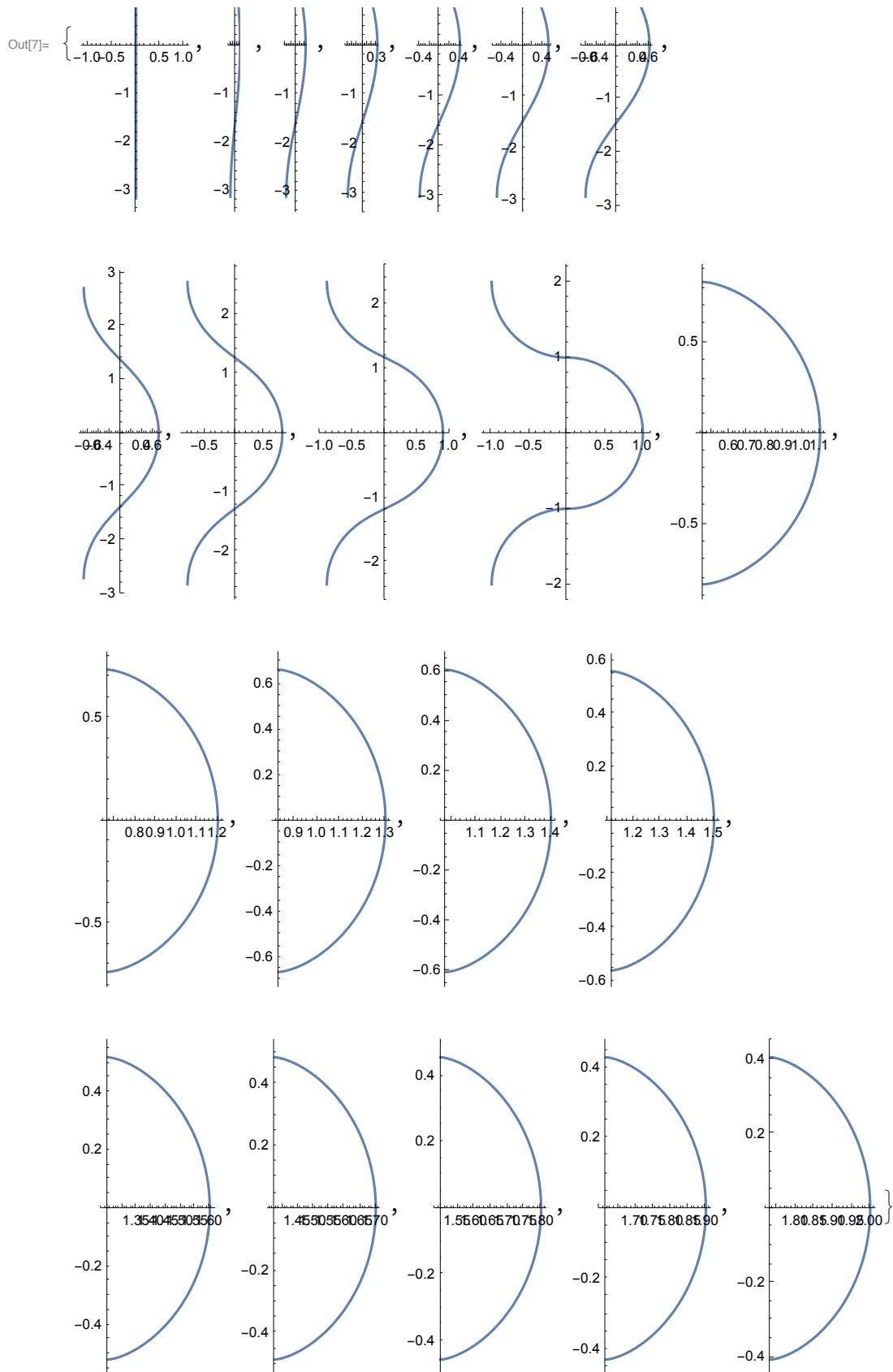
$$\text{Out}[5]= \frac{1}{2}$$

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In[6]:= ParametricPlot[{f[u], g[u]}, {u, -π, π}]
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In[7]:= Table[ParametricPlot[{f[u], g[u]}, {u, -π, π}], {a, 0, 2, .1}]
```





In[8]:= **Table[ParametricPlot3D[**

{f[u] Cos[t], f[u] Sin[t], g[u]}, {u, -π, π}, {t, 0, 2 π}], {a, 0, 2, .1}]

