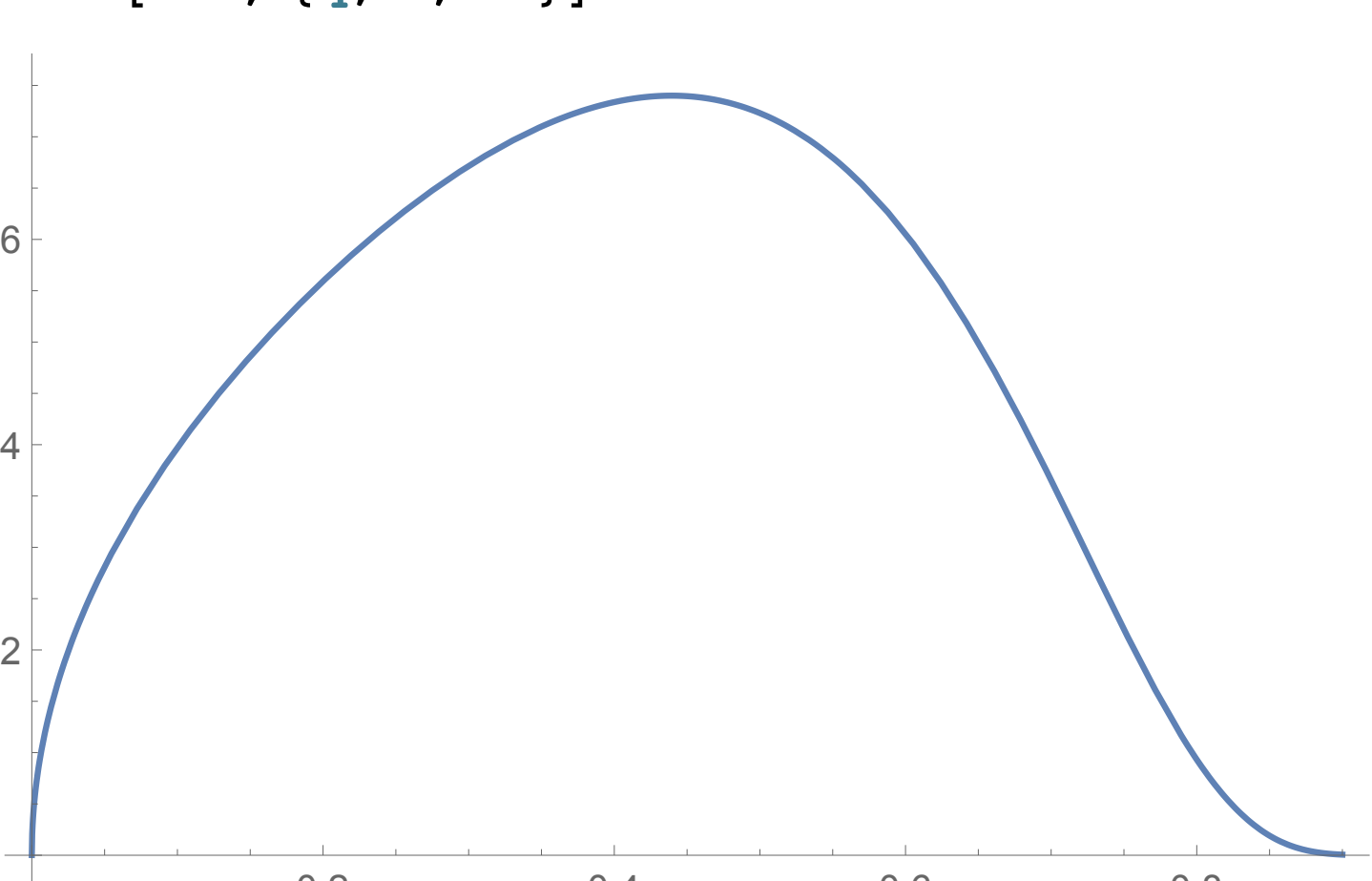


$$2 \int_0^{2 \pi} \left(\vartheta_1'(t,q) \vartheta_2(t,q) - \vartheta_2'(t,q) \vartheta_1(t,q)\right) dt$$

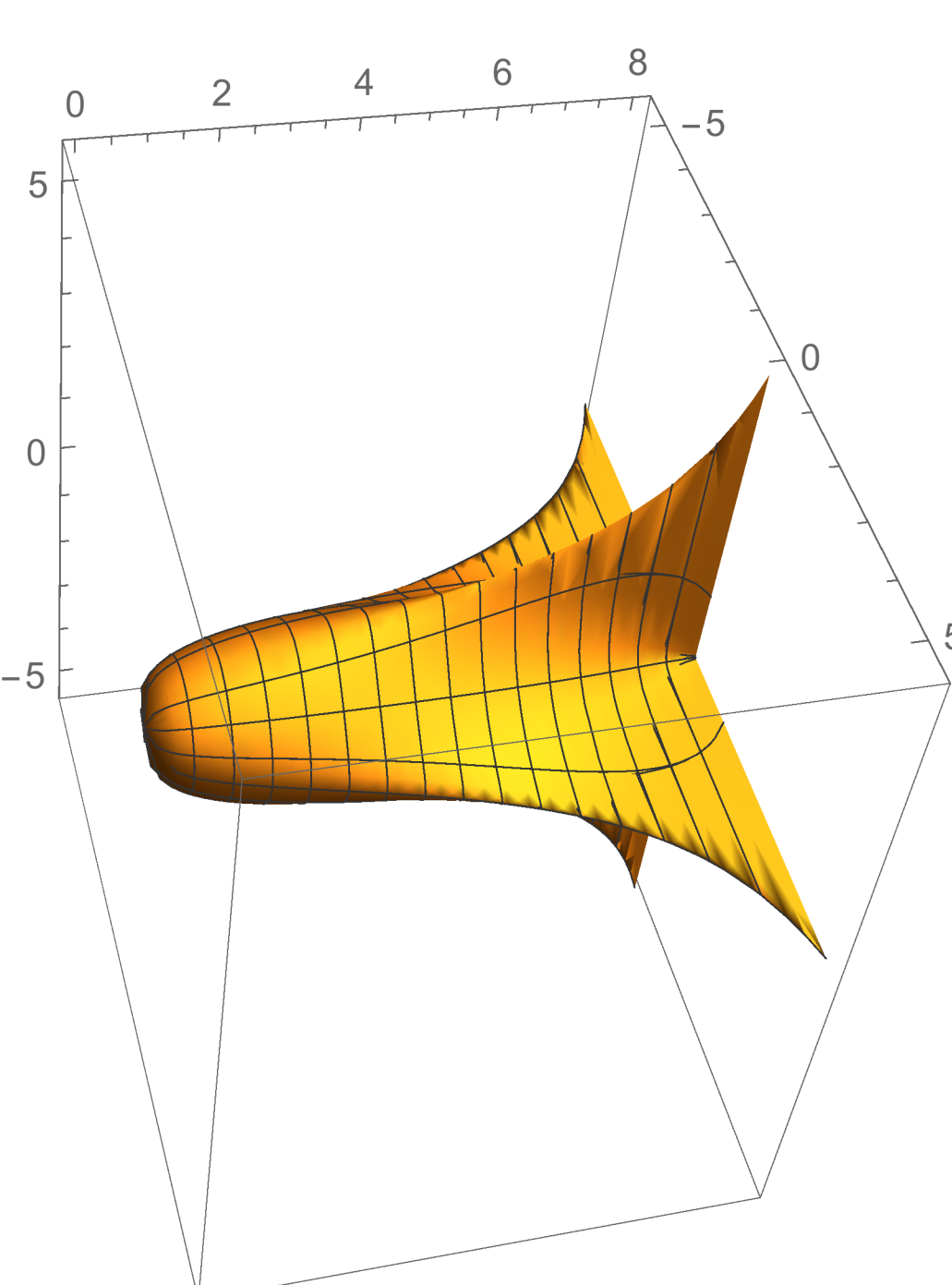
```
Plot[%63, {q, 0, .9}]
```



$$\frac{1}{2} \int_0^{2 \pi} \int_0^1 \left(\text{EllipticTheta}[2, t, q] \text{EllipticThetaPrime}[1, t, q] - \text{EllipticTheta}[1, t, q] \text{EllipticThetaPrime}[2, t, q]\right) dq dt$$

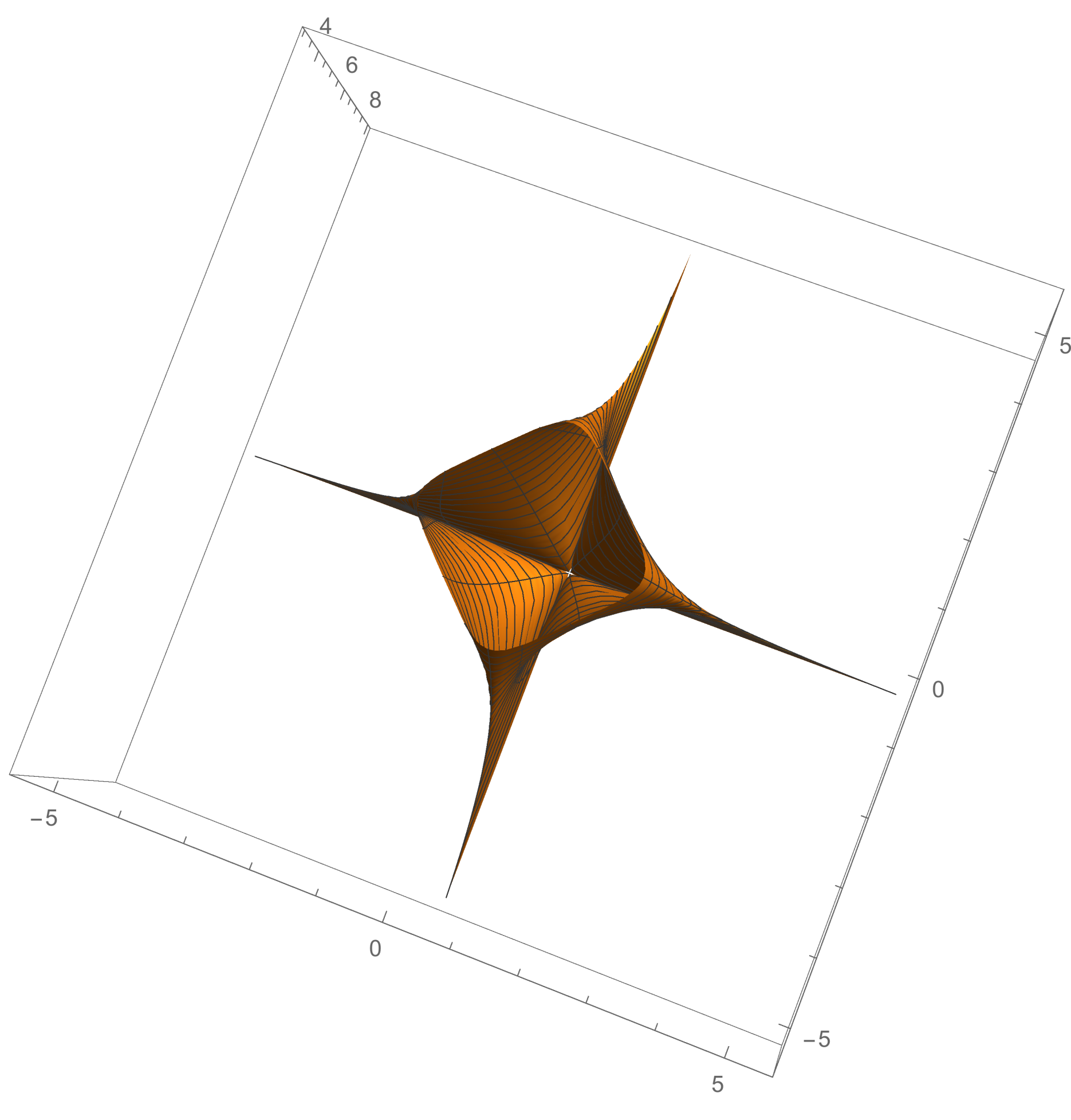
$$4.231765644191597 - 1.9279358920823073 \times 10^{-180} i$$

```
ParametricPlot3D[{EllipticTheta[2, t, q], EllipticTheta[1, t, q], 9 * q}, {q, 0, .9}, {t, 0, 2 * pi}]
```

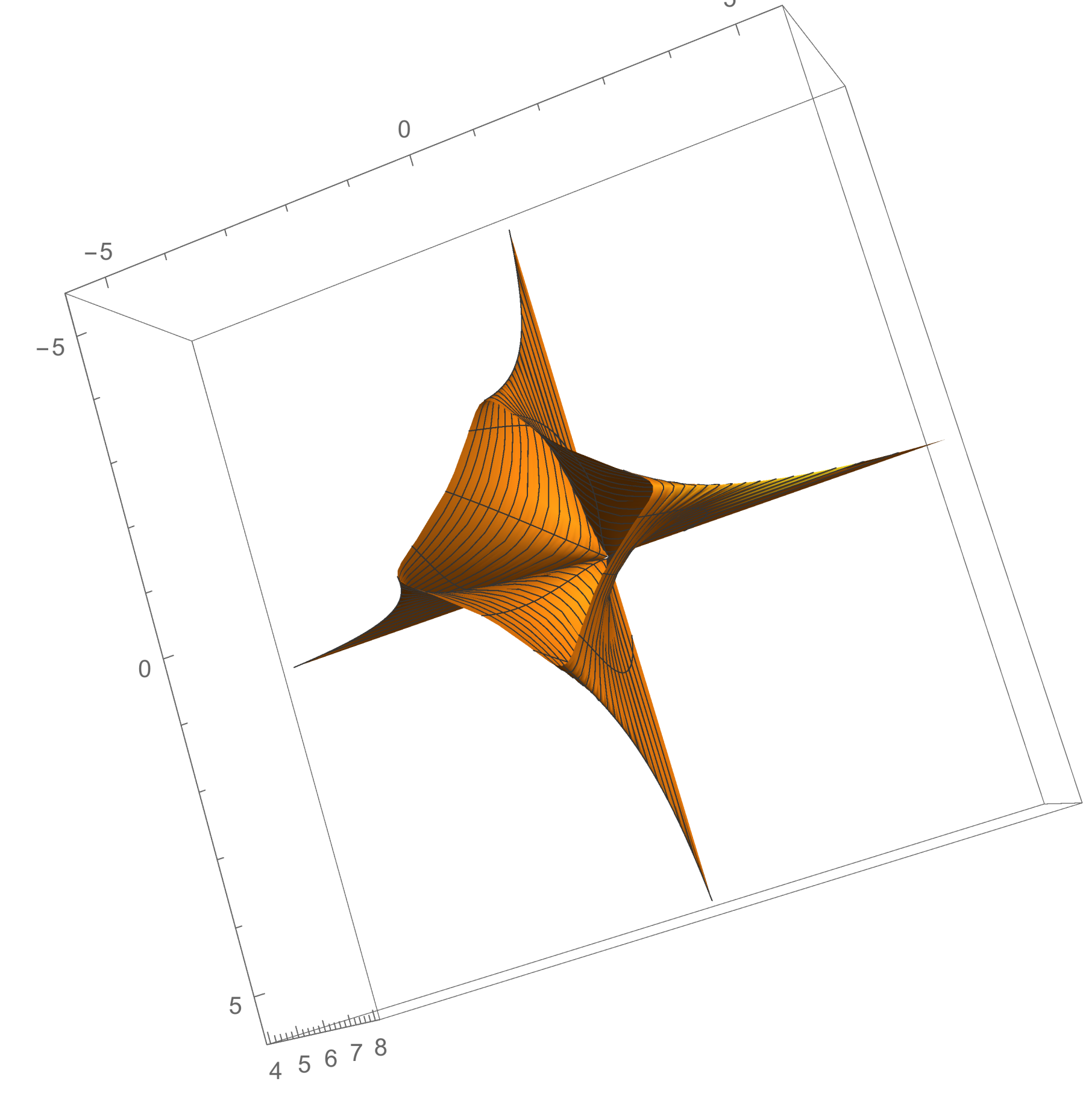


$$0.328106567$$

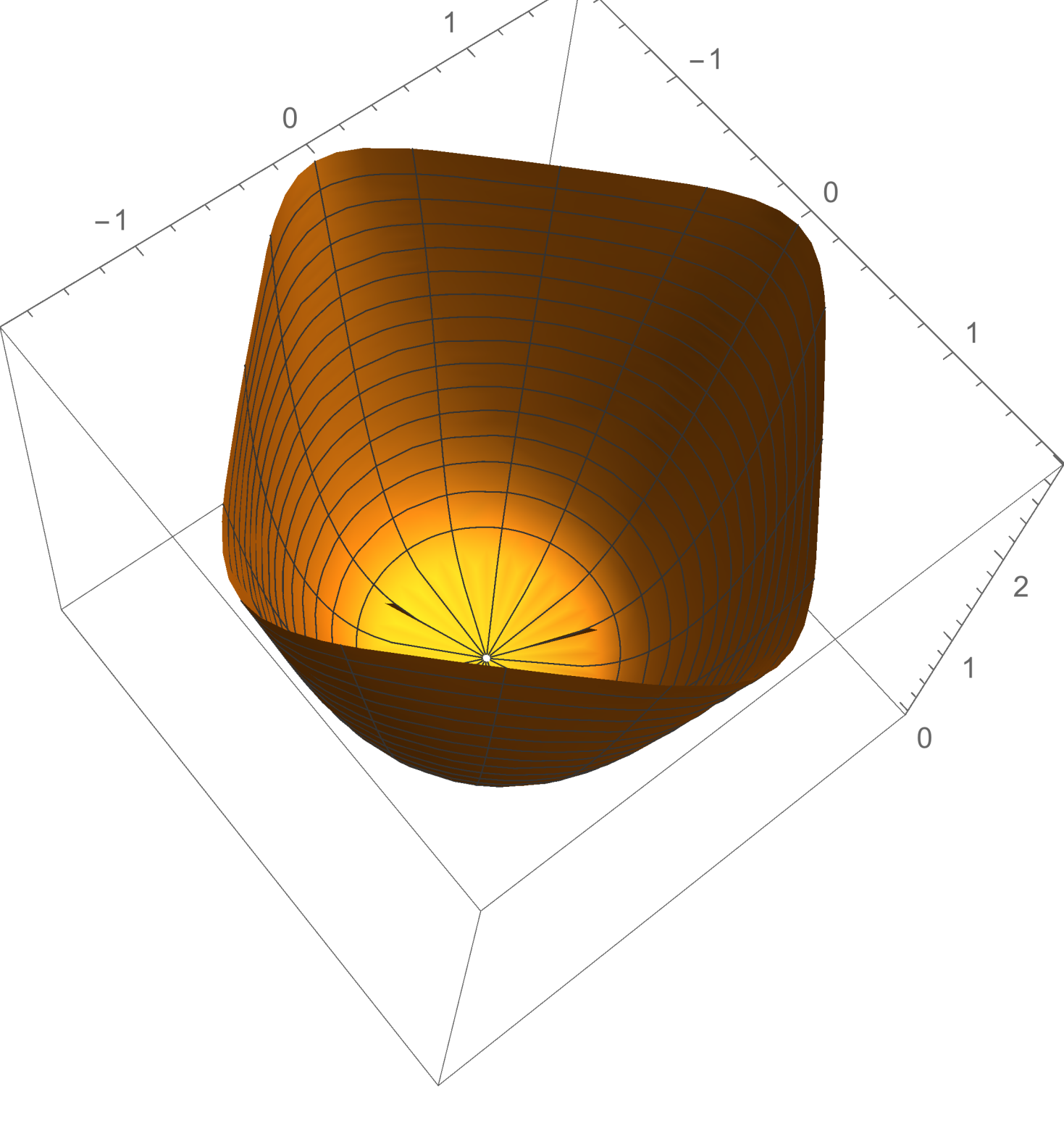
```
ParametricPlot3D[{EllipticTheta[2, t, q], EllipticTheta[1, t, q], 9 * q}, {q, %72, .9}, {t, 0, 2 * pi}]
```



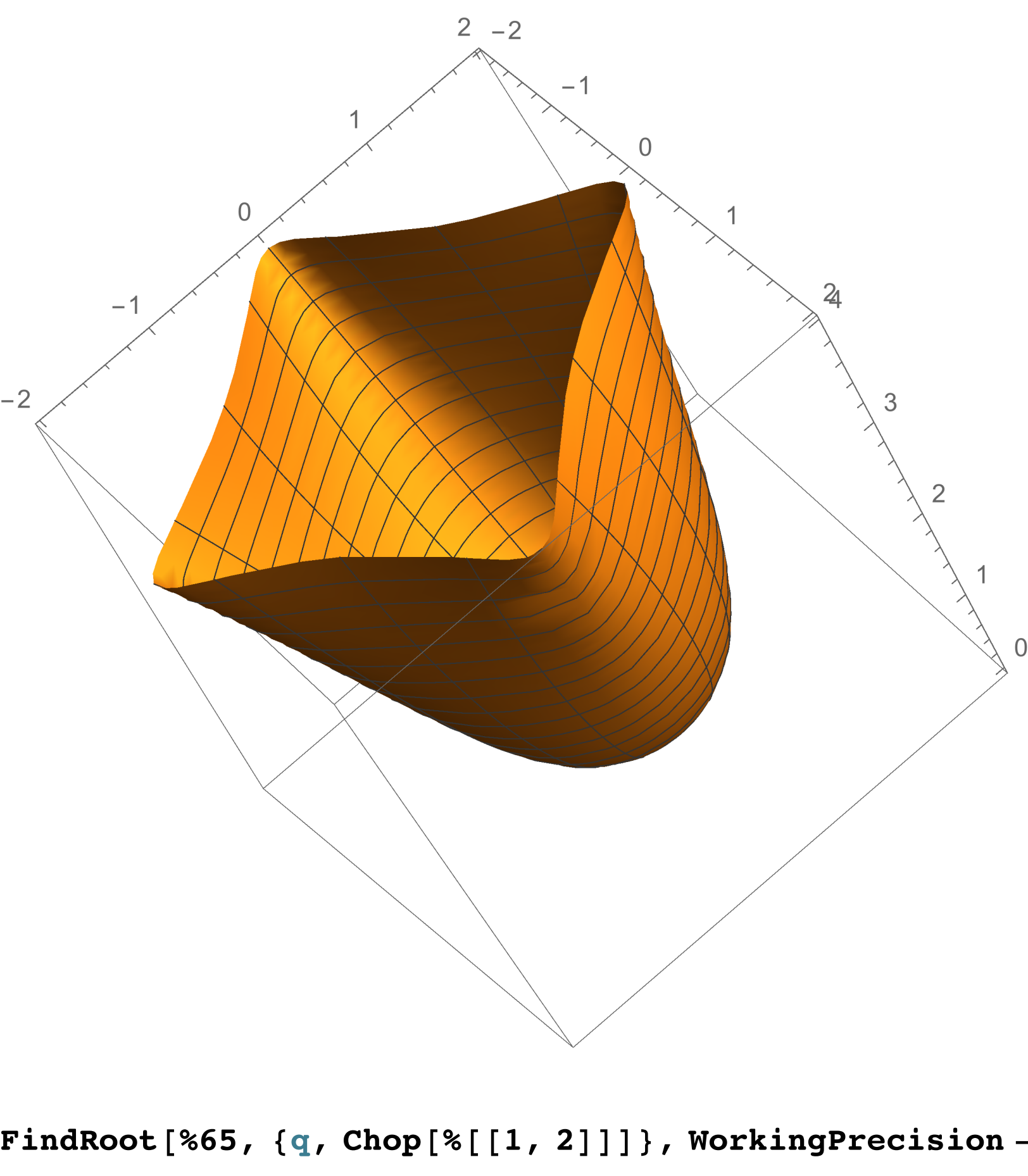
```
ParametricPlot3D[{EllipticTheta[2, t, q], EllipticTheta[1, t, q], 9 * q}, {q, %87[[1, 2]], .9}, {t, 0, 2 * pi}]
```



```
ParametricPlot3D[{EllipticTheta[2, t, q], EllipticTheta[1, t, q], 9 * q}, {q, 0, %72}, {t, 0, 2 * pi}]
```



```
ParametricPlot3D[{EllipticTheta[2, t, q], EllipticTheta[1, t, q], 9 * q}, {q, 0, %87[[1, 2]]}, {t, 0, 2 * pi}]
```



```
FindRoot[%65, {q, Chop[%[[1, 2]]]}, WorkingPrecision -> 22]
```

```
FindRoot[%65, {q, SetPrecision[%80[[1, 2]], 32]}, WorkingPrecision -> 32]
```

$$\{q \rightarrow 0.43939962899109219485183075448731\}$$

$$\frac{1}{2^{1/12} e^{3/5} \text{Log}[3]^{7/4}}$$

```
N[%, 22]
```

$$0.4393996289952895884432$$