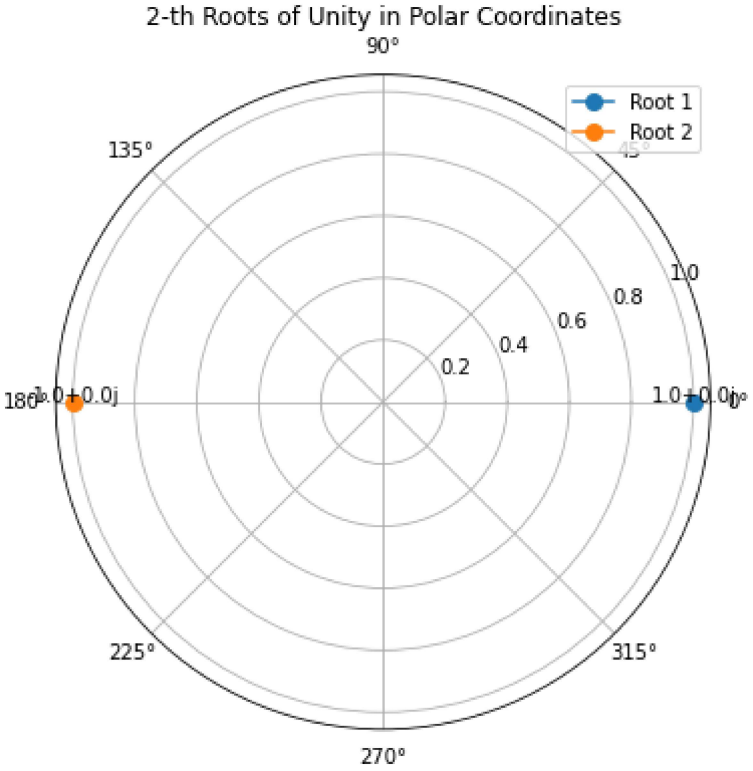
In [4]:
```
1 v=2+2+4+0+1+2+9 # 2240129 my reg number
2 v
```

Out[4]: 20

In [1]:

```
import matplotlib.pyplot as plt
import cmath
import math




def get_single_digit(n):
    while n >= 10:
        n = sum(int(digit) for digit in str(n))
    return n


reg_number = int(input("Enter your register number: "))


n = get_single_digit(reg_number)
print(f"Reduced value of n (sum of digits): {n}")

complex_num = 1



roots = [cmath.rect(1, (2 * k * cmath.pi) / n) for k in range(n)]


plt.figure(figsize=(6, 6))
for i, root in enumerate(roots):
    angle, magnitude = cmath.phase(root), abs(root)
    plt.polar(angle, magnitude, marker='o', markersize=8, label=f"Root
    plt.text(angle, magnitude, f"{round(root.real, 2)}+{round(root.imag


plt.title(f"{n}-th Roots of Unity in Polar Coordinates")
plt.legend()
plt.grid(True)
plt.show()

```

```
Enter your register number: 2240129
Reduced value of n (sum of digits): 2
```


2-th Roots of Unity in Polar Coordinates
90°
135°
45°
180°
225°
315°
270°
0°
0.2
0.4
0.6
0.8
1.0
Root 1
Root 2
-1.0+0.0j
1.0+0.0j

In [ ]:
```
1
```

In [ ]:
```
1
```