Name _____ Score _____ Teacher _____ Date _____

Polar Function Graphs

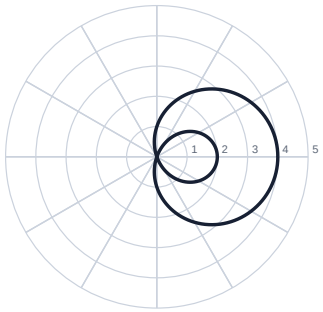
Use the stated full-trace interval, test the requested symmetry, and plot the key-angle table before drawing the curve.

1. **Graph r^2 = 4 cos(2theta) on 0 <= theta <= 2pi. Test polar-axis symmetry with theta -> -theta, vertical-axis symmetry with theta -> pi - theta, and pole symmetry with theta -> theta + pi. Complete the key-value table; for a squared-radius equation, tabulate the nonnegative root.**

theta	0	pi/4	pi/2	pi	3pi/2	2pi
r						

numbered radial scale

2. **Identify the completed polar graph's family and write a matching equation. Use the numbered radial scale. State its symmetries.**



completed graph with numbered radial scale

Use exact values unless a decimal angle is requested.

Name _____ Score _____ Teacher _____ Date _____

Polar Function Graphs

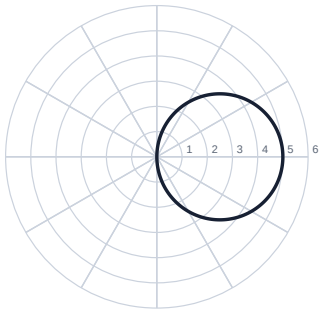
Use the stated full-trace interval, test the requested symmetry, and plot the key-angle table before drawing the curve.

3. **Graph r = 4(1 + cos(theta)) on 0 <= theta <= 2pi. Test polar-axis symmetry with theta -> -theta, vertical-axis symmetry with theta -> pi - theta, and pole symmetry with theta -> theta + pi. Complete the key-value table; for a squared-radius equation, tabulate the nonnegative root.**

theta	0	pi/4	pi/2	pi	3pi/2	2pi
r						

numbered radial scale

4. **Identify the completed polar graph's family and write a matching equation. Use the numbered radial scale. State its symmetries.**



completed graph with numbered radial scale

Use exact values unless a decimal angle is requested.