EXAMPLE Sketch the curve with polar equation \( r = 2 + 2 \cos \theta \)

EXAMPLE Sketch the curve with polar equation \( r = 2 + 3 \sin \theta \)

EXAMPLE Sketch the curve with polar equation \( r = 2 \sin 4\theta \)
Differentiating polar coordinates We do this using parametric equations.

For \( r = f(\theta) \), the parametric equations are \( x = \)

\( y = \)

Then \( \frac{dy}{dx} = \)

**EXAMPLE** Find the slopes of tangents at the pole for \( r = 2 \sin 4\theta \)
EXAMPLE  Find the points on the curve $r = 2 + 2 \cos \theta$ where the tangent line is horizontal or vertical.