Math 265B: Tangents and Polar Graphs (Section 11.3)

Given the graph $r = \frac{1}{2}\theta$

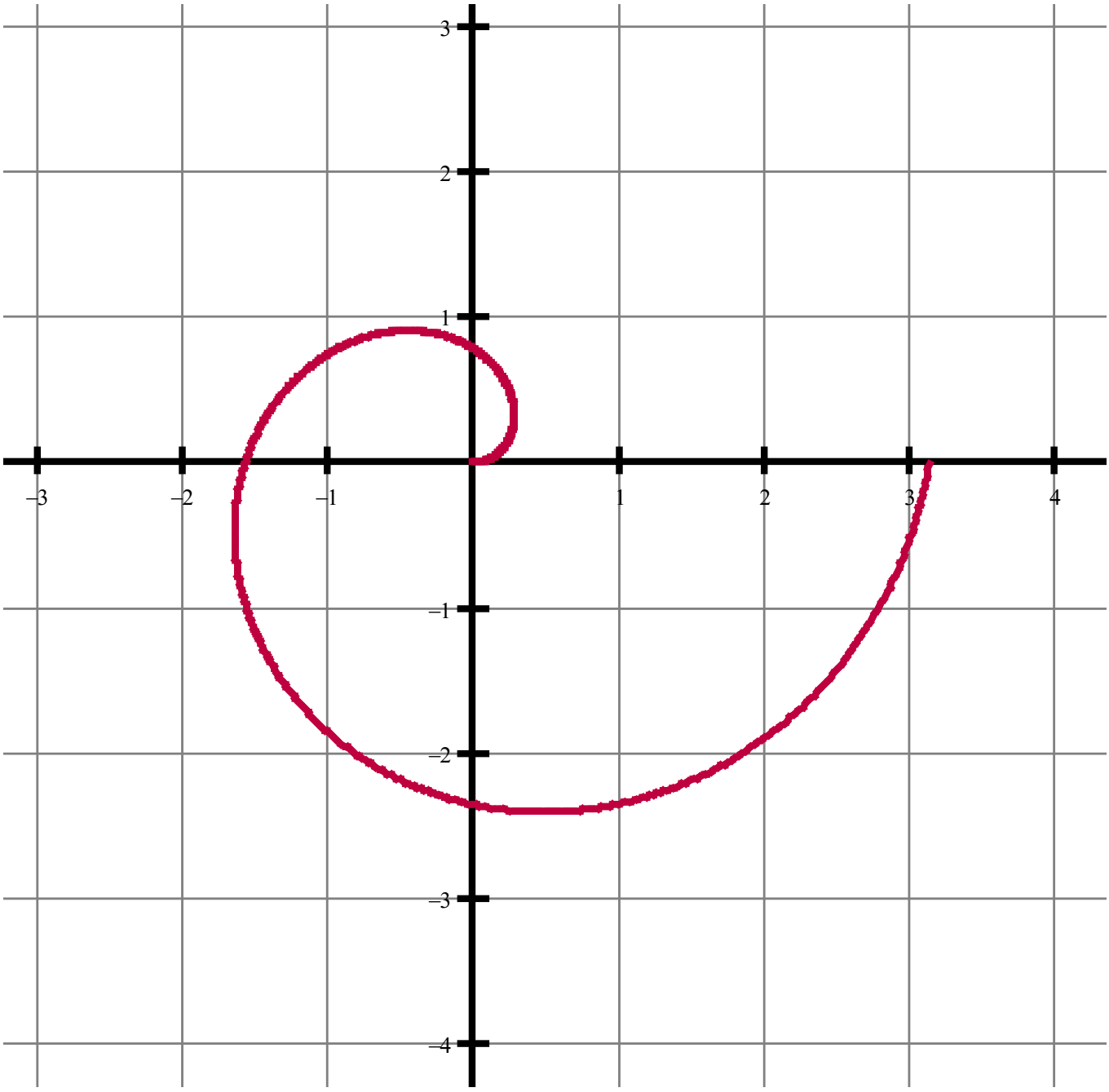
(1) Sketch the graph (roughly)

(2) Find the slope of the line tangent to the graph at $\theta = \frac{\pi}{4}, \frac{\pi}{2}, \frac{7\pi}{6}$. Sketch tangents at these points and verify they have the slope you found. (Use the curve provided on the other side of this worksheet.)

(3) Determine one value of theta where

(a) the tangent line is horizontal

(b) the tangent line is vertical.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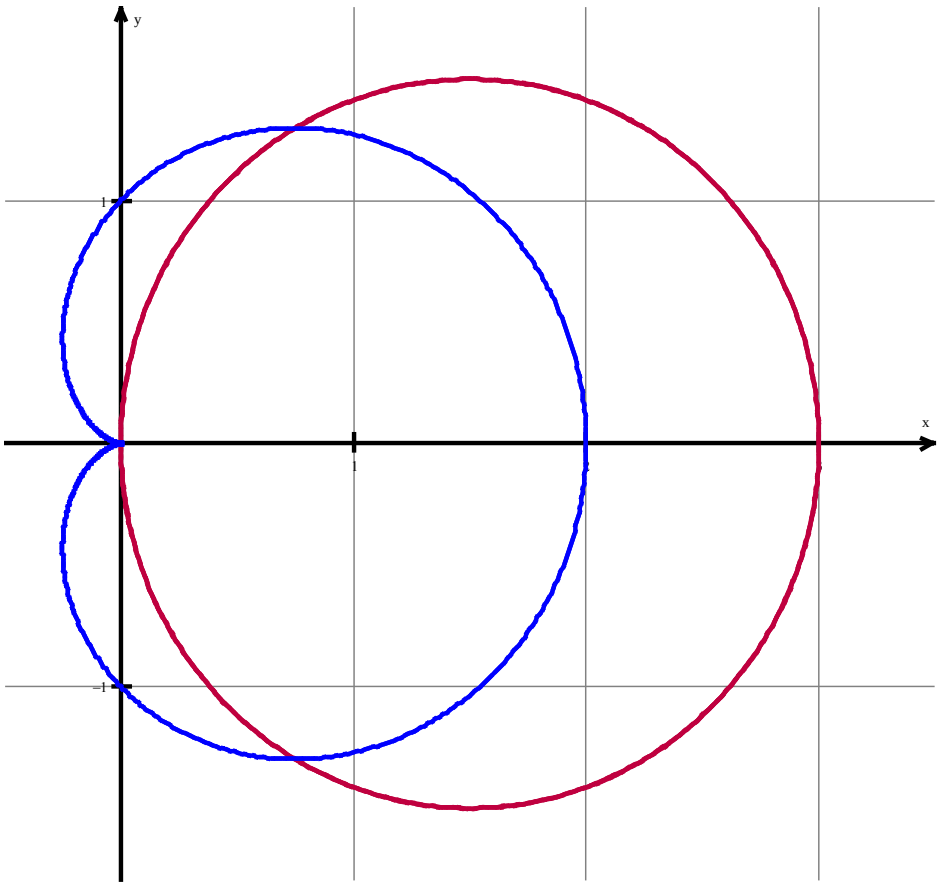
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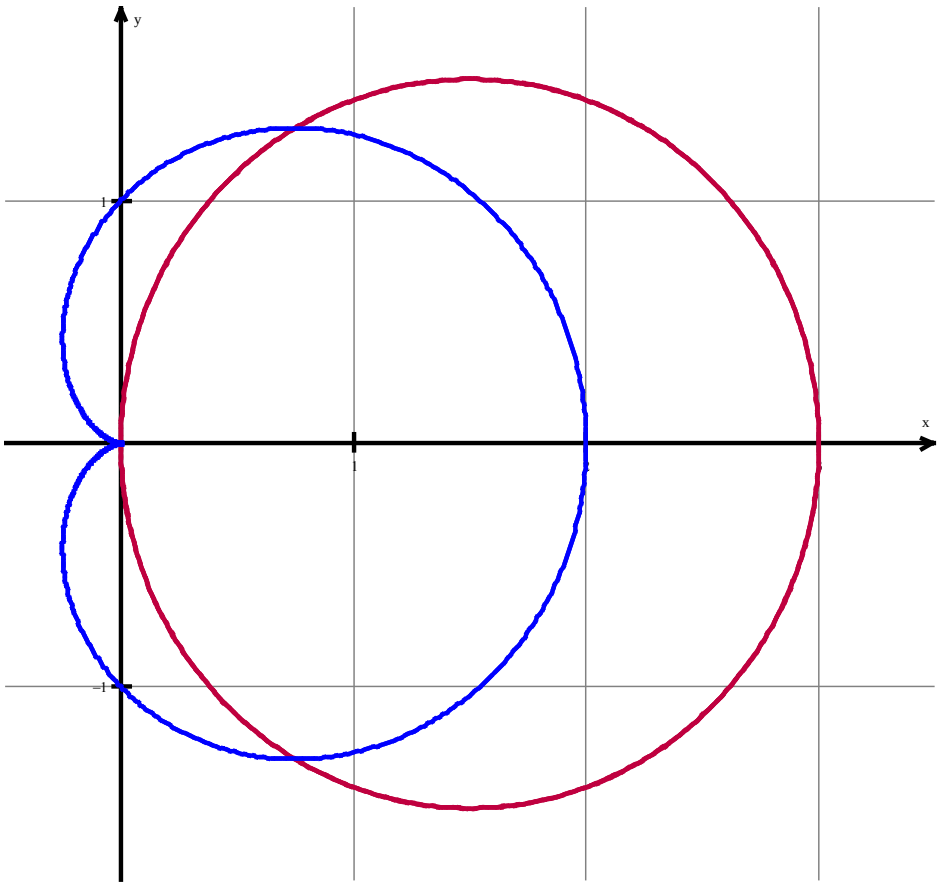
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