Name: _____

Show your work fully for all questions. Quiz has front and back sides.

Problem 1: An ellipse is given by $x = a\cos\theta$, $y = b\sin\theta$. For $a = 2$ and $b = 3$ sketch the ellipse and find the area it encloses.

Problem 2: Find the length of the curve given by $x = t^3$, $y = 2t$ for $0 < t < 2$.

Problem 3: Find the slope of the tangent line of $r = 3 - 2\sin\theta$ at $\theta = \pi/3$