Math 233 - Quiz 6

Name _____

April 22, 2021

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due April 29.

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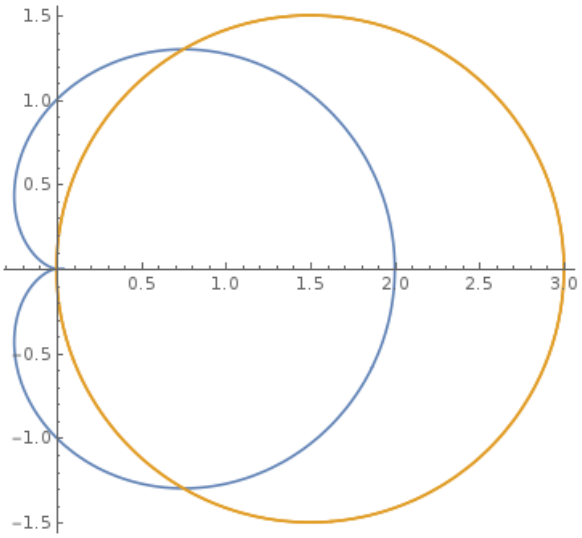
1. (5 points) Use a double integral to find the area of the polar region inside the cardioid $r = 1 + \cos\theta$ and outside the circle $r = 3\cos\theta$.



Turn over.

2. (5 points) Let P be the space region in the first octant below the plane $x + y + z = 9$ and above the region in the xy-plane bounded by the graphs of $x = 0$, $y = x^2 + 1$ and $x + y = 7$. Evaluate the triple integral $\iiint_P dV$.