Math 132 - Quiz 3

Name _____

September 7, 2022

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due September 12.

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1. (3 points) The 1st-quadrant region between the graphs $y = 4x - x^2$ and $y = 0$ is rotated about the line $x = 5$ to form a solid of revolution. Find the volume of the solid.

2. (3 points) The bounded region between the graphs of $y = x^2 + 6$ and $y = 5x$ is rotated about the y-axis to form a solid of revolution. Find the volume of the solid.

Turn over.

3. (2 points) The base of a solid is the triangle in the xy-plane with vertices $(0, 0)$, $(1, 0)$, and $(1, 1)$. Cross sections (slices) perpendicular to the y-axis are squares. Find the volume of the solid.

4. (2 points) Consider the portion of the graph of $f(x) = x^3 - 2x^2 - 3x$ that lies in the 4th quadrant. Set up the definite integral that gives the length of that portion. Use your calculator or computer to estimate the value of the integral.