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**Instructions:** *Include all relevant work to get full credit. Write your solutions using proper notations. Encircle your final answers.*

**Quiz #20**

1. Find the volume of the solid obtained by rotating the region bounded by  $y = x^3$ ,  $y = 0$ , and  $x = 2$  about the  $x$ -axis. [5]

2. Find the volume of the solid obtained by rotating the region bounded by  $y = x^3$ ,  $y = 0$ , and  $x = 2$  about the line  $y = -1$ . [5]