

NAME: \_\_\_\_\_ ID: \_\_\_\_\_ Section: \_\_\_\_\_

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**Exercise 1** (5 points)

Use cylindrical shells to find the volume of the solid obtained by rotating the region bounded by the curves  $y = e^{-x^2}$ ,  $y = 0$ ,  $x = 0$ ,  $x = 1$  about Y-axis (**show all your steps**)

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**Exercise 2** (5 points)

Evaluate the integral  $\int_0^{\frac{\pi}{3}} \tan^5 x \sec^6 x dx$  (**show all your steps**)

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**Exercise 1** (5 points)

Use cylindrical shells to find the volume of the solid obtained by rotating the region bounded by the curves  $y = x^2$ ,  $y = 0$ ,  $x = -2$ ,  $x = -1$  about Y-axis (**show all your steps**)

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**Exercise 2** (5 points)

Evaluate the integral  $\int \sin^3 x \sqrt{\cos x} dx$  (**show all your steps**)

