

Quiz #4: Review of Chapter 5

Show all work in a neat and logical manner in order to get full credit.
You may use your textbook & notes to answer these questions in a timely manner.

Section 5.2 & 5.3 - Volumes of Solids

1 pts.

1. Write the general formula for finding the volume of the solid of revolution using the disk method.

1. _____

3 pts.

2. Write the general formula for finding the volume of the solid of revolution using the washer method. Include a figure to explain your formula.

2. _____

3 pts.

3. Write the general formula for finding the volume of the solid of revolution using the shell method. Include a figure to explain your formula.

3. _____

4. Find the volume of the solid generated when the region bounded by the curves

$$x = y^2, y = 1, x = 0$$

is revolved about the x-axis. (Cross reference Section 5.3 #9)

2 pts.

(a) Sketch the graph of this region.

3 pts.

(b) Set-up the integral if the region is sliced perpendicular to the y-axis.

3 pts.

(c) Set-up the integral if the region is sliced parallel to the y-axis.

Section 5.4 - Length & Surface Area of Plane Curves

- 1 pts. 5. Write the general formula for finding the arc length of a curve given by parametric equations.

5. _____

- 1 pts. 6. Write the general formula for finding the surface area of revolution generated by revolving a curve given by parametric equations about the x-axis.

6. _____

- 4 pts. 7. Do Problem #23 from this section.

Section 5.5 - Work & Fluid Force

1 pts. 8. Write the simple formula for finding work.

8. _____

3 pts. 9. Write the formula for Hooke's Law and explain what each variable represents.

5 pts. 10. Do Problem #11 from this section include a sketch of the tank on the coordinate axes and label the main points.

Points earned: _____ out of a possible 30 points