

Review Lesson Chapter 6 Calculus Adv. Placement

Objective: In Advanced Placement Calculus students will learn:

- A) To find Area between 2 curves
- B) To find Volume by Disk Method
- C) To find Volume by Shell Method
- D) To find Volume by Washer Method
- E) To find Volume by Slicing Method

A) Find Area Between 2 Curves Formula =

Find the area of the region that is enclosed between $y = x^2$ and $y = x + 6$
Set up, do not solve.

B) Find Volume by Disk Method Formula =

Find the volume of the solid generated when Region R is revolved about x-axis.
Region R is enclosed by $y = x$, $y = 0$, and $y = \sqrt{2 - x}$. Set up, do not solve.

C) Find Volume by Shell Method Formula =

Find the volume of the solid generated when the Region R in the 1st Quadrant is enclosed by $y = x$ and $y = x^2$ is revolved about the y-axis. Set up, do not solve.

D) Find Volume by Washer Method Formula =

Find the volume of the solid that results when the region enclosed by the given curves is revolved about the y-axis. $y = 1 + x^3$, $x=1$, and $y = 9$.
Set up-do not solve.

E) Find Volume by Slicing Method Formula =

The base of a certain solid is the region enclosed by the circle $x^2 + y^2 = 9$ and each cross section perpendicular to the x-axis is an equilateral triangle with one side across the base. Find the volume.

Derivation of formula.

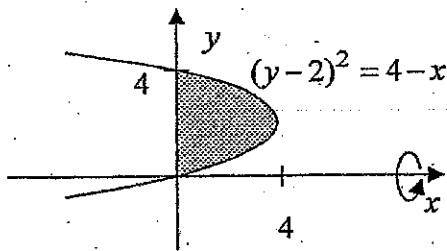
Calculus Work Sheet
Finding Volumes

Name _____
Date _____
Period _____
Row _____

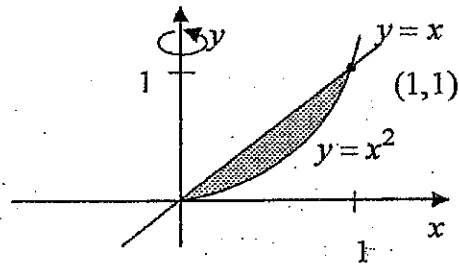
Directions: Find the volume of the solid that results when the shaded region is revolved about the indicated axis.

1. Determine which method to use.
2. Draw a vertical or horizontal line in the region to indicate dx or dy .
3. Write an equation of the volume. (Do not solve.)

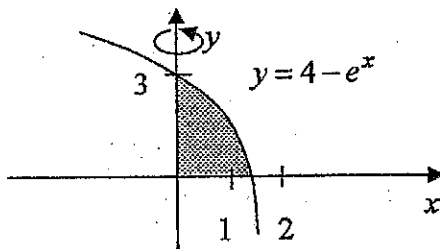
1)



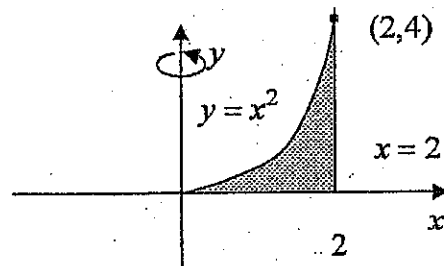
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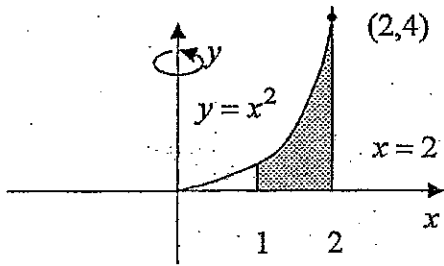
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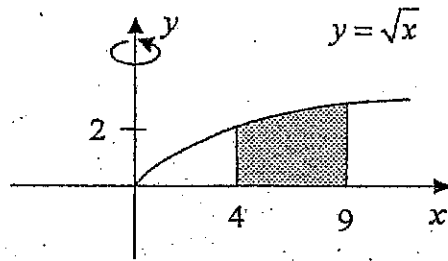
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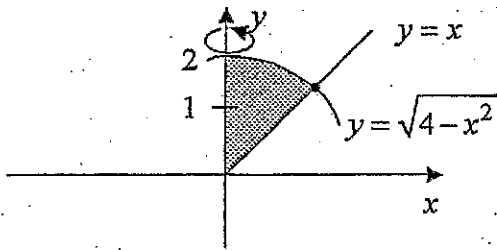
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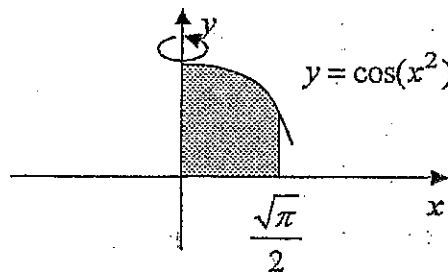
8)



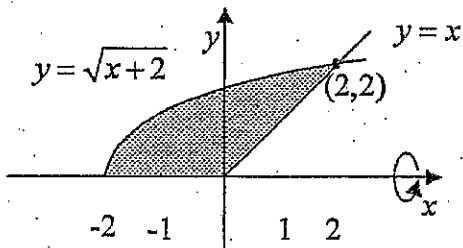
6)



9)



7)



10)

