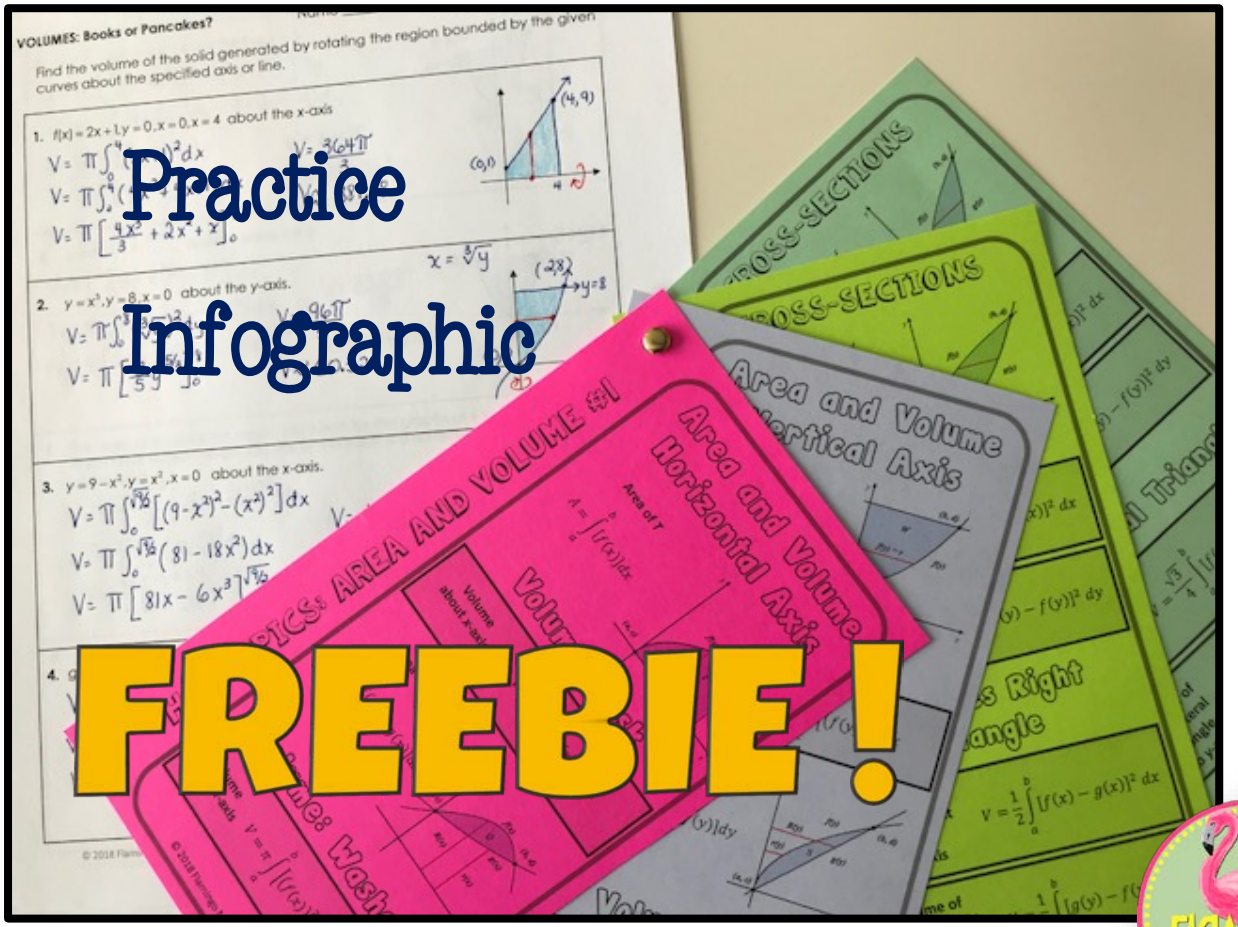
VOLUMES: BOOKS or PANCAKES?



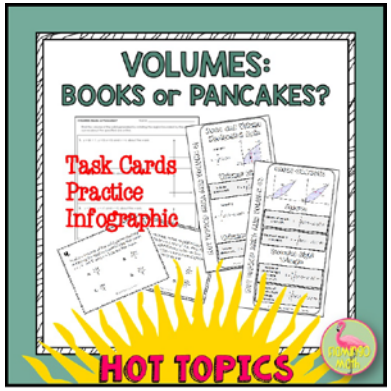
FLAMINGO MATH

Volumes: Books or Pancakes? Solids of Revolution is a required Calculus skill needed for success on the AP Calculus Exam®.

Here is a set of 4 HOT TOPIC INFOGRAPHICS:

- Students can use the infographic as a page in their Interactive Notebook.
- Copy on card stock and laminate to be used as a bookmark or reference card while working through your lesson.
- Students can create a collection of HOT TOPICS for review at the end of the course.

You will also find a practice set of 8 questions that can be used as a homework or quiz.



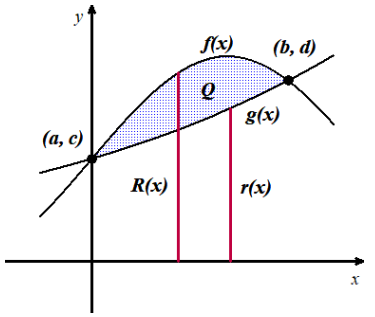
Do you need a full lesson on this topic? Be sure to check out my Calculus products:

Read my blog post for:

Volumes: Books or Pancakes?

HOT TOPICS: AREA AND VOLUME

Area and Volume

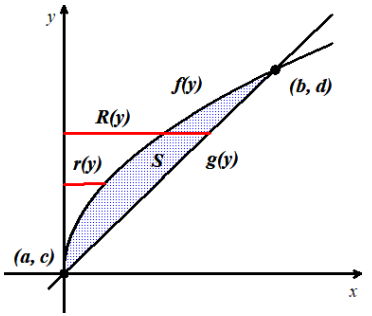


Area of *Q*

$$A = \int_a^b [f(x) - g(x)]dx$$

Volume about *x*-axis

$$V = \pi \int_a^b \left[\left(f(x)\right)^2 - \left(g(x)\right)^2 \right] dx$$



Area of *S*

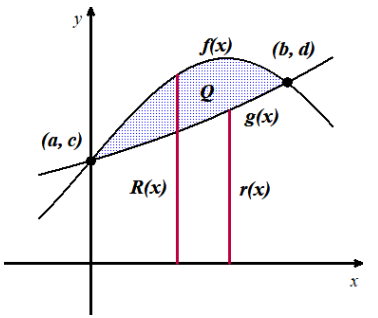
$$A = \int_c^d [g(y) - f(y)]dy$$

Volume about *y*-axis

$$V = \pi \int_c^d \left[\left(g(y)\right)^2 - \left(f(y)\right)^2 \right] dy$$

HOT TOPICS: AREA AND VOLUME

Area and Volume



Area of *Q*

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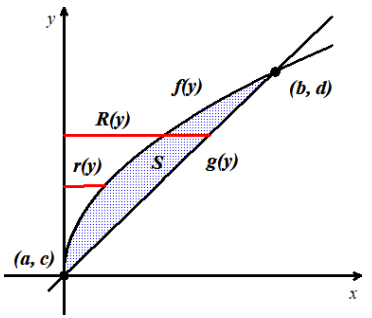
Volume about *x*-axis

$$V = \pi \int_a^b \left[\left(f(x)\right)^2 - \left(g(x)\right)^2 \right] dx$$



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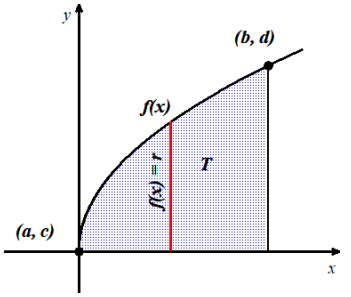
Directions: There are two HOT TOPICS per page. Print the HOT TOPIC on paper or card stock. Then, cut each one out individually. These can be used as a laminated bookmark, or as a notebook foldable.

HOT TOPICS: AREA AND VOLUME #1

Area and Volume Horizontal Axis

Area of *T*

$$A = \int_a^b [f(x)]dx$$



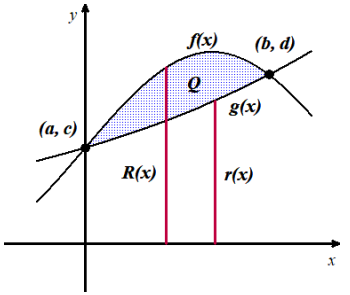
Volume: Disk

Volume about *x*-axis

$$V = \pi \int_a^b \left[(f(x))^2\right] dx$$

Area of *Q*

$$A = \int_a^b [f(x) - g(x)]dx$$



Volume: Washer

Volume about *x*-axis

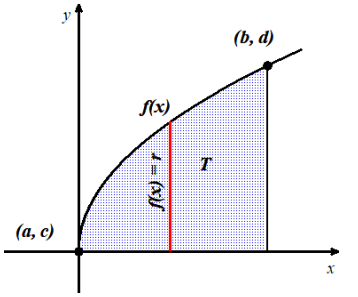
$$V = \pi \int_a^b \left[(f(x))^2 - (g(x))^2\right] dx$$

HOT TOPICS: AREA AND VOLUME #1

Area and Volume Horizontal Axis

Area of T

$A = \int_a^b [f(x)]dx$

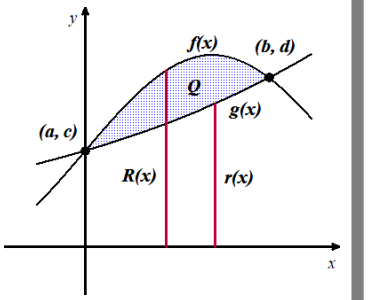


Volume: Disk

Volume about x-axis $V = \pi \int_a^b \left[(f(x))^2\right] dx$

Area of Q

$A = \int_a^b [f(x) - g(x)]dx$



Volume: Washer

Volume about x-axis $V = \pi \int_a^b \left[(f(x))^2 - (g(x))^2\right] dx$

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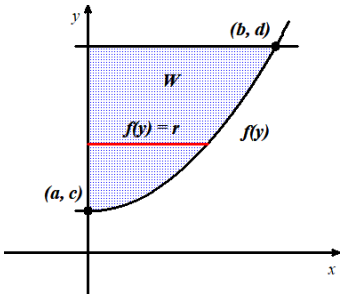
HOT TOPICS: AREA AND VOLUME #2

Area and Volume Vertical Axis

Area of *W*

$$A = \int_c^d [f(y)]dy$$



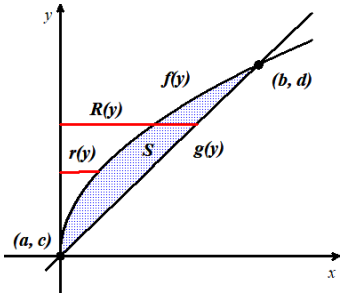
Volume: Disk

Volume about *y*-axis

$$V = \pi \int_c^d \left[(f(y))^2\right] dx$$

Area of *S*

$$A = \int_c^d [g(y) - f(y)]dy$$



Volume: Washer

Volume about *y*-axis

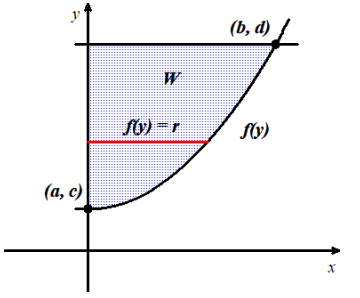
$$V = \pi \int_c^d \left[(g(y))^2 - (f(y))^2\right] dy$$

HOT TOPICS: AREA AND VOLUME #2

Area and Volume Vertical Axis

Area of W

$A = \int_c^d [f(y)]dy$

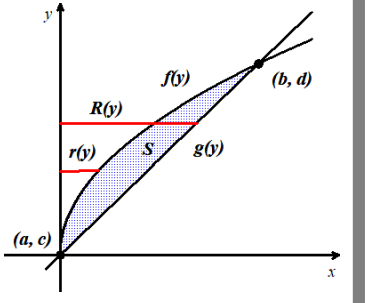


Volume: Disk

Volume about y-axis $V = \pi \int_c^d \left[(f(y))^2\right] dx$

Area of S

$A = \int_c^d [g(y) - f(y)]dy$



Volume: Washer

Volume about y-axis $V = \pi \int_c^d \left[(g(y))^2 - (f(y))^2\right] dy$

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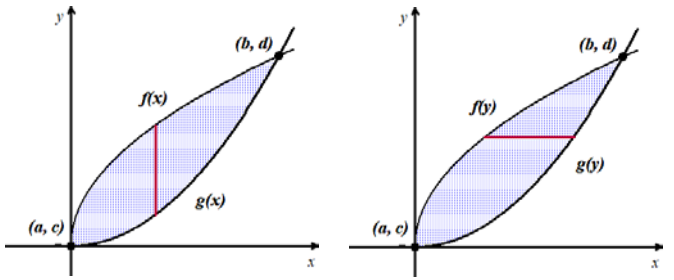
HOT TOPICS: AREA AND VOLUME #3

CROSS-SECTIONS



Squares

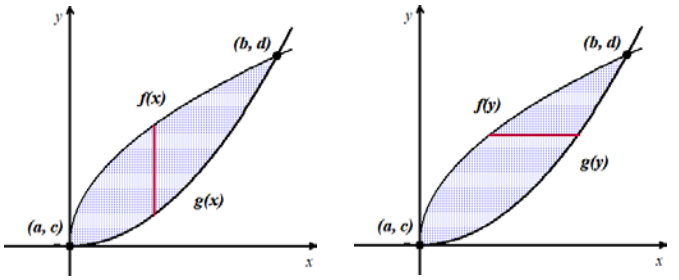
Volume of squares ⊥ to *x*-axis	$V = \int_a^b [f(x) - g(x)]^2 \, dx$
Volume of squares ⊥ to *y*-axis	$V = \int_c^d [g(y) - f(y)]^2 \, dy$

Isosceles Right Triangle

Volume of Isosceles Right Triangle ⊥ to *x*-axis	$V = \frac{1}{2}\int_a^b [f(x) - g(x)]^2 \, dx$
Volume of Isosceles Right Triangle ⊥ to *x*-axis	$V = \frac{1}{2}\int_a^b [g(y) - f(y)]^2 \, dy$

HOT TOPICS: AREA AND VOLUME #3

CROSS-SECTIONS



Squares

Volume of squares ⊥ to *x*-axis	$V = \int_a^b [f(x) - g(x)]^2 \, dx$
Volume of squares ⊥ to *y*-axis	$V = \int_c^d [g(y) - f(y)]^2 \, dy$

Isosceles Right Triangle

Volume of Isosceles Right Triangle ⊥ to *x*-axis	$V = \frac{1}{2}\int_a^b [f(x) - g(x)]^2 \, dx$
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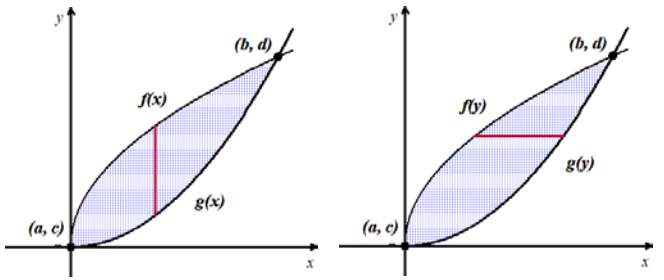
HOT TOPICS: AREA AND VOLUME #4

CROSS-SECTIONS



Semi-Circles

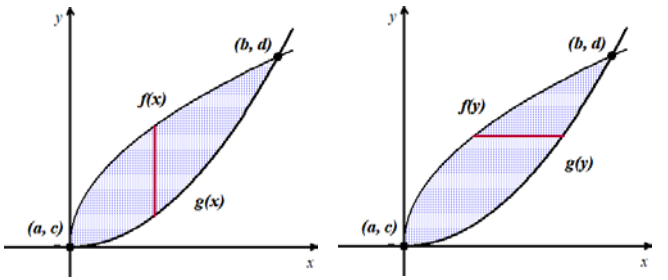
Volume of Semi-Circles ⊥ to *x*-axis	$V = \frac{\pi}{8}\int_a^b [f(x) - g(x)]^2\,dx$
Volume of Semi-Circles ⊥ to *y*-axis	$V = \frac{\pi}{8}\int_c^d [g(y) - f(y)]^2\,dy$

Equilateral Triangle

Volume of Equilateral Triangle ⊥ to *x*-axis	$V = \frac{\sqrt{3}}{4}\int_a^b [f(x) - g(x)]^2\,dx$
Volume of Equilateral Triangle ⊥ to *y*-axis	$V = \frac{\sqrt{3}}{4}\int_c^d [g(y) - f(y)]^2\,dy$

HOT TOPICS: AREA AND VOLUME #4

CROSS-SECTIONS



Semi-Circles

Volume of Semi-Circles ⊥ to *x*-axis	$V = \frac{\pi}{8}\int_a^b [f(x) - g(x)]^2\,dx$
Volume of Semi-Circles ⊥ to *y*-axis	$V = \frac{\pi}{8}\int_c^d [g(y) - f(y)]^2\,dy$

Equilateral Triangle

Volume of Equilateral Triangle ⊥ to *x*-axis	$V = \frac{\sqrt{3}}{4}\int_a^b [f(x) - g(x)]^2\,dx$
Volume of Equilateral Triangle ⊥ to *y*-axis	$V = \frac{\sqrt{3}}{4}\int_c^d [g(y) - f(y)]^2\,dy$

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