

Calculus 6 2 Part I Disk and Washer's Method

Lesson 309 | Calculus AB | Disk and washer volumes

<https://www.youtube.com/watch?v=bZz71MQiKh0>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Rotate the region between $y=14$ and $y=12$, for $0 \leq x \leq 6$, about the x -axis. Set up a washer integral and find the volume.

02

Rotate the region between $y=6$ and $y=3$, for $0 \leq x \leq 3$, about the x -axis. Set up a washer integral and find the volume.

03

Rotate the region between $y=7$ and $y=1$, for $0 \leq x \leq 3$, about the x -axis. Set up a washer integral and find the volume.

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04

Rotate the region between $y=2$ and $y=1$, for $0 \leq x \leq 7$, about the x -axis. Set up a washer integral and find the volume.

05

Rotate the region between $y=3$ and $y=1$, for $0 \leq x \leq 6$, about the x -axis. Set up a washer integral and find the volume.

06

Rotate the region between $y=11$ and $y=6$, for $0 \leq x \leq 4$, about the x -axis. Set up a washer integral and find the volume.

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- 01** Rotate the region between $y=14$ and $y=12$, for $0 \leq x \leq 6$, about the x -axis. Set up a washer integral and find the volume.

Outer radius 14, inner radius 12. $V = \pi \int_0^6 (196 - 144) dx = 312\pi$ cubic units.

- 02** Rotate the region between $y=6$ and $y=3$, for $0 \leq x \leq 3$, about the x -axis. Set up a washer integral and find the volume.

Outer radius 6, inner radius 3. $V = \pi \int_0^3 (36 - 9) dx = 81\pi$ cubic units.

- 03** Rotate the region between $y=7$ and $y=1$, for $0 \leq x \leq 3$, about the x -axis. Set up a washer integral and find the volume.

Outer radius 7, inner radius 1. $V = \pi \int_0^3 (49 - 1) dx = 144\pi$ cubic units.

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04

Rotate the region between $y=2$ and $y=1$, for $0 \leq x \leq 7$, about the x -axis. Set up a washer integral and find the volume.

Outer radius 2, inner radius 1. $V = \pi \int_0^7 (4-1) dx = 21\pi$ cubic units.

05

Rotate the region between $y=3$ and $y=1$, for $0 \leq x \leq 6$, about the x -axis. Set up a washer integral and find the volume.

Outer radius 3, inner radius 1. $V = \pi \int_0^6 (9-1) dx = 48\pi$ cubic units.

06

Rotate the region between $y=11$ and $y=6$, for $0 \leq x \leq 4$, about the x -axis. Set up a washer integral and find the volume.

Outer radius 11, inner radius 6. $V = \pi \int_0^4 (121-36) dx = 340\pi$ cubic units.