

1. award: 10.00 points Problems? [Adjust credit](#) for all students.

Sec. Ex. 1 - 5.3 Section Exercise 1

1 out of 3 attempts

Identify the radius and height.
The region bounded by $y = x^2$ and the x -axis, $-2 \leq x \leq 2$, revolved about $x = 5$

Radius: $r =$ Height: $h =$

5 - x

TD-FG

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Sec. Ex. 9 - 5.3 Section Exercise 9

1 out of 3 attempts

Use cylindrical shells to compute the volume.

The region bounded by $y = x^2$ and $y = 50 - x^2$, revolved about $x = -7$



$$r = x + 7$$

$$h = 50 - 2x^2$$

$$\int_{-5}^5 2\pi(x+7)(50-2x^2) dx$$

$$\frac{14000\pi}{3}$$

Andy

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Sec. Ex. 14 - 5.3 Section Exercise 14

1 out of 3 attempts

Identify the radius and height of each shell and compute the volume for the given region.

The region bounded by $y = 4x$ and $y = x^2 - 5$ revolved about the line $x = 5$.

A. $r = 5 - x$, $h = (x - (x^2 + 5))$, $V = 108\pi$
 B. $r = 5 - x$, $h = (x + (x^2 + 5))$, $V = 108\pi$
 C. $r = 5 - x$, $h = (x + (x^2 - 5))$, $V = 108\pi$
 D. $r = 5 - x$, $h = 4x - (x^2 - 5)$, $V = 108\pi$

$$r = 5 - x$$

$$h = 4x - (x^2 - 5)$$

$$= 4x - x^2 + 5$$

Kathleen

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4.

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Sec. Ex. 15 - 5.3 Section Exercise 15

1 out of 3 attempts

Use cylindrical shells to compute the volume.

The region bounded by $x = (y - 1)^2$ and $x = 9$ revolved about $y = 6$ 

$$r = 6 - y$$

$$h = 9 - (y - 1)^2$$

$$\int_{-2}^4 2\pi(6-y)[9-(y-1)^2] dy$$

$$x = 9 = (y - 1)^2$$

$$\pm 3 = y - 1$$

$$1 \pm 3 = y$$

C.L.D.

Horse

$$V = 2(6-x)(9-(x-1)^2)$$

$$\text{Calc 7: } \int f(x) dx$$

$$\text{Lower: } -2$$

$$\text{Upper: } 4$$

$$\int f(x) dx = 360$$

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Sec. Ex. 17b - 5.3 Section Exercise 17b

1 out of 3 attempts

Use the best method available to find the volume.
 The region bounded by $y = 4 - x$, $y = 4$ and $y = x$ revolved about the y -axis

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Handwritten notes:

$$r = 4 - x$$

$$h = 2 - x$$

$$\text{area} = 4$$

$$\int_0^2 2\pi (x)(x) dx + \int_2^4 2\pi (x)(4-x) dx$$

$$2\pi \frac{x^3}{3} \Big|_0^2 + 2\pi \left(4x - \frac{x^2}{2} \right) \Big|_2^4$$

$$= \frac{16\pi}{3} + 64\pi - \frac{128\pi}{3} - \frac{x^3}{4} \Big|_2^4$$

$$= 16\pi \quad \text{Jun} \quad \text{lin} \quad + \frac{16\pi}{3}$$

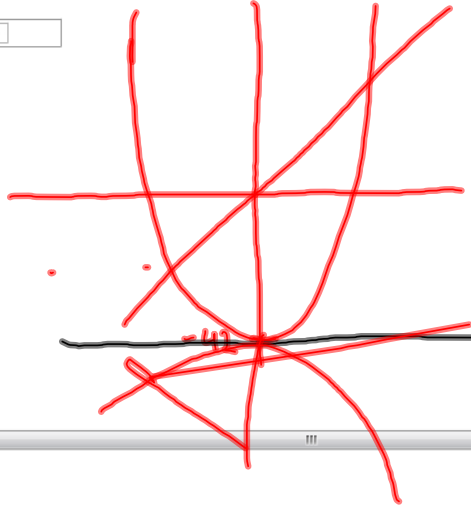
Sec. Ex. 19d - 5.3 Section Exercise 19d

1 out of 3 attempts

Use the best method available to find the volume.

The region bounded by $y = x$ and $y = x^2 - 42$ revolved about $y = -42$.

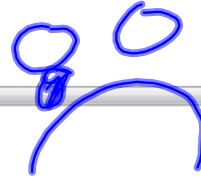
$V =$



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JMG

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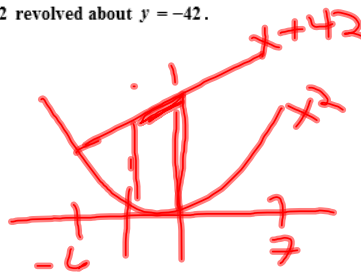
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Sec. Ex. 19d - 5.3 Section Exercise 19d

Use the best method available to find the volume.

The region bounded by $y = x$ and $y = x^2 - 42$ revolved about $y = -42$.

$$\begin{aligned}
 V &= \int_{-6}^7 \pi \left((x+42)^2 - (x^2)^2 \right) dx \\
 &= \pi \int_{-6}^7 \left(-x^4 + x^2 + 84x + 1764 \right) dx \\
 &= \pi \left(-\frac{x^5}{5} + \frac{x^3}{3} + 42x^2 + 1764x \right) \Big|_{-6}^7 \\
 &= \frac{281216}{15} \pi
 \end{aligned}$$



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