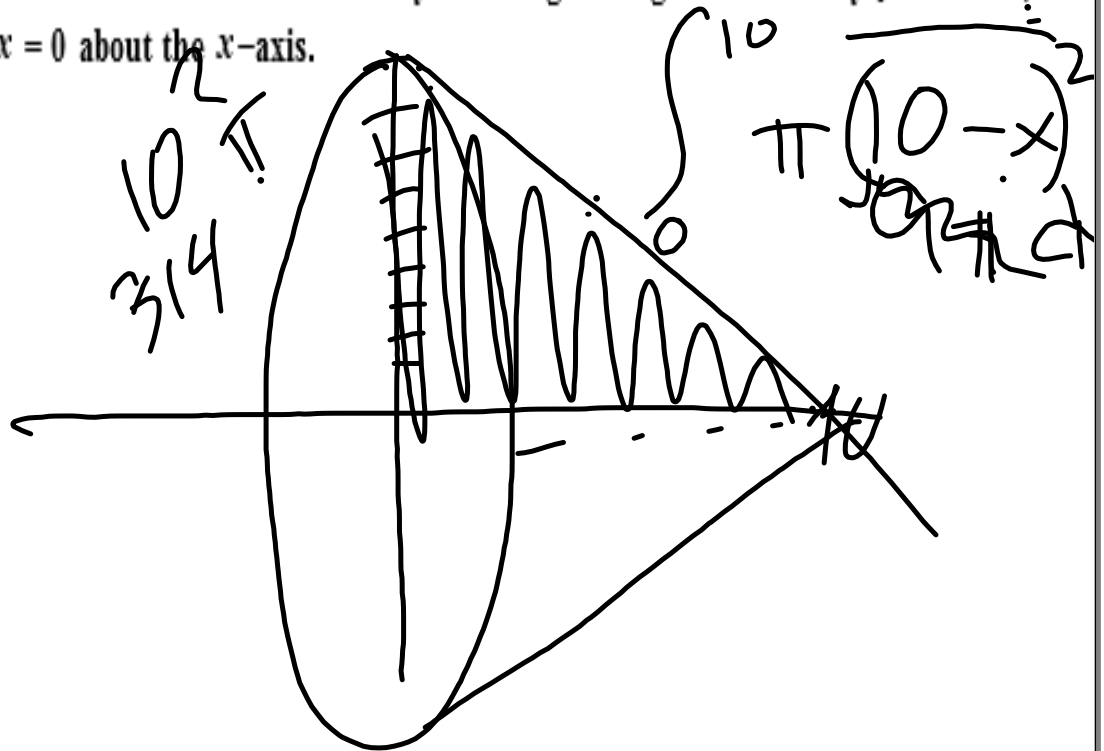


Find the volume of the solid with cross-sectional area $A(x)$.

$$A(x) = x + 4, -7 \leq x \leq 5$$

$$V = \boxed{}$$

Compute the volume of the solid formed by revolving the region bounded by $y = 10 - x$, $y = 0$ and $x = 0$ about the x -axis.



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Sec. Ex. 17a - 5.2 Section Exercise 17a

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Compute the volume of the solid formed by revolving the region bounded by $y = 10 - x$, $y = 0$ and $x = 0$ about the x -axis.

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$$V = \pi \int_0^{10} (10 - x)^2 dx$$

$$= -\pi \left(\frac{(10 - x)^3}{3} \right) \Big|_0^{10}$$

$$= \frac{1000\pi}{3}$$

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$$= -\pi \left(\frac{(10-x)^3}{3} \right) \Big|_0^{10}$$

$$= \frac{1000\pi}{3}$$

$$u = 10 - x \quad du$$

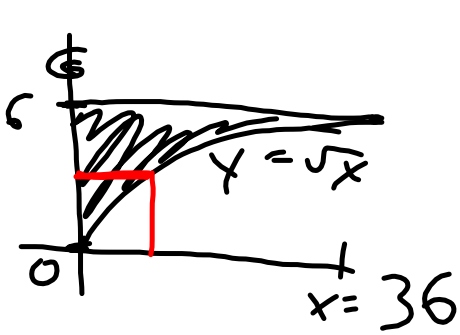
$$du = -dx$$

$$- \int_{10}^0 u^2 du$$

$$= - \frac{1}{3} u^3 \Big|_{10}^0 = \left(0 - \frac{1000}{3} \right)$$

Compute the volume of the solid formed by revolving the given region about the given line.

Region bounded by $y = \sqrt{x}$, $y = 6$ and $x = 0$ about the y -axis.



$$y = \sqrt{x}$$

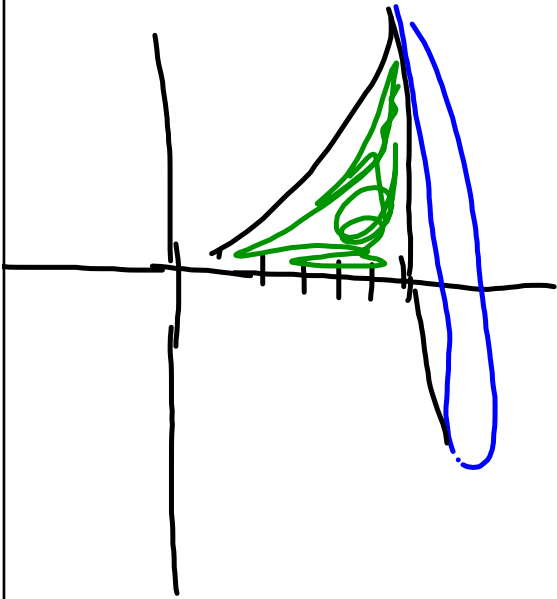
$$x = y^2$$

$$\pi \int_0^6 \pi (y^2)^2 dy$$

$$\pi \int_0^6 \pi y^4 dy$$

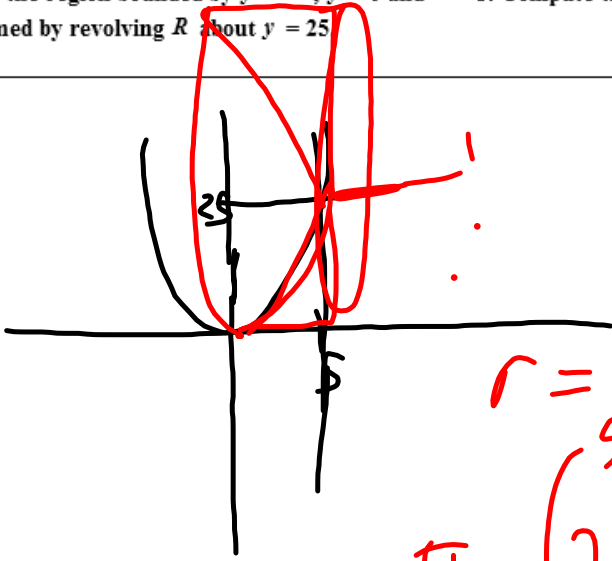
$$\pi \cdot \left. \frac{y^5}{5} \right|_0^6 = 1555.2 \pi$$

Let R be the region bounded by $y = x^2$, $y = 0$ and $x = 6$. Compute the volume of the solid formed by revolving R about the x -axis.



$$\int_0^6 \pi (x^2)^2 dx$$
$$= \pi \left[\frac{x^5}{5} \right]_0^6$$
$$= \pi \left[\frac{6^5}{5} \right]$$

Let R be the region bounded by $y = x^2$, $y = 0$ and $x = 5$. Compute the volume of the solid formed by revolving R about $y = 25$.



$$r = 25 - x^2$$

$$\pi \int_0^5 (25^2 - (25 - x^2)^2) dx$$

$$= \pi \int_0^5 (25^2 - 50x^2 + x^4) dx$$

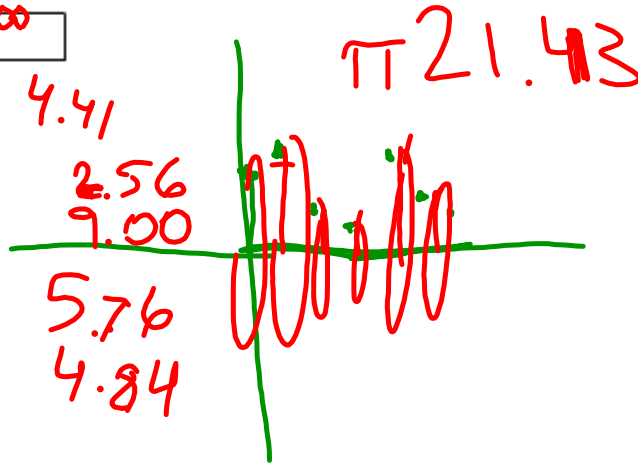
$$= \pi \left[\frac{50x^3}{3} - \frac{x^5}{5} \right]_0^5$$

Use the given table of values to estimate the volume of the solid formed by revolving $y = f(x)$, $0 \leq x \leq 3$, about the x -axis. Round your answer to three decimal places.

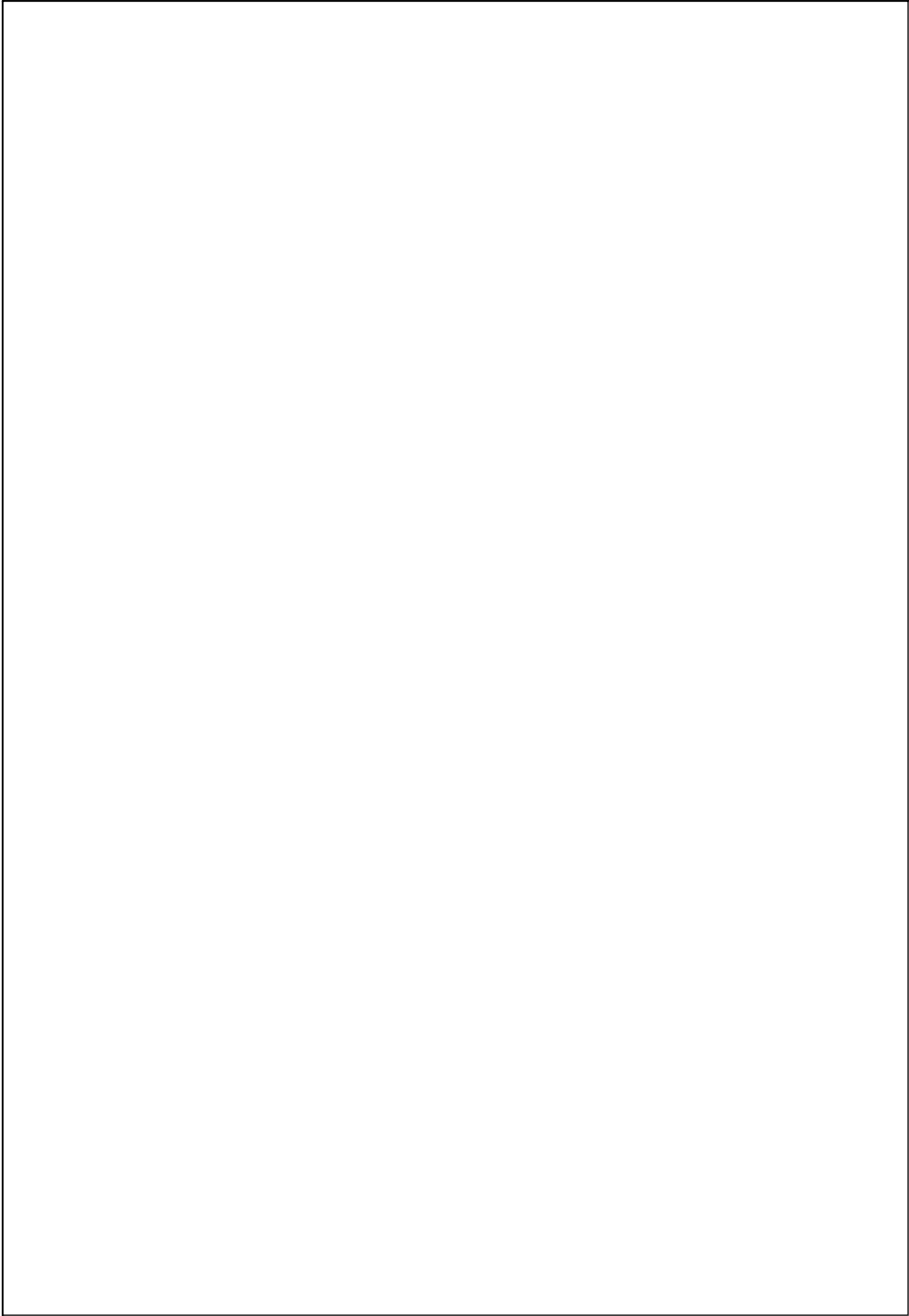
x	0	0.5	1.0	1.5	2.0	2.5	3.0
$f(x)$	2.7	3.0	2.1	1.6	3.0	2.4	2.2

$V \approx$

7.27 9.00







Sep 2-9:57 PM