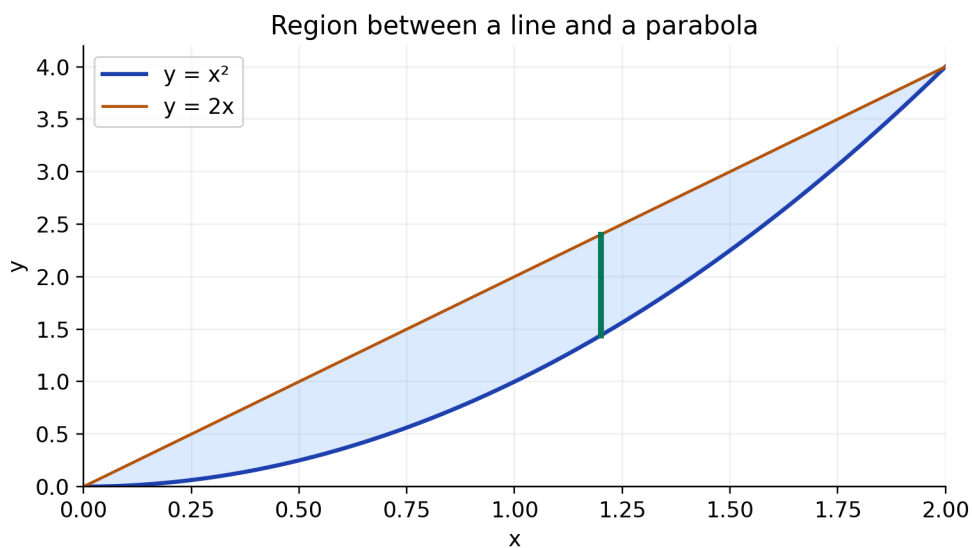


Lesson 5.1 · Practice

No calculator required | Name: _____

1. Find the area enclosed by $y = 2x$ and $y = x^2$.



Identify upper and lower boundaries and their intersections.

2. Find the average value of $f(x) = 3x^2$ on $[0, 2]$.

Lesson 5.1 · Practice

No calculator required | Name: _____

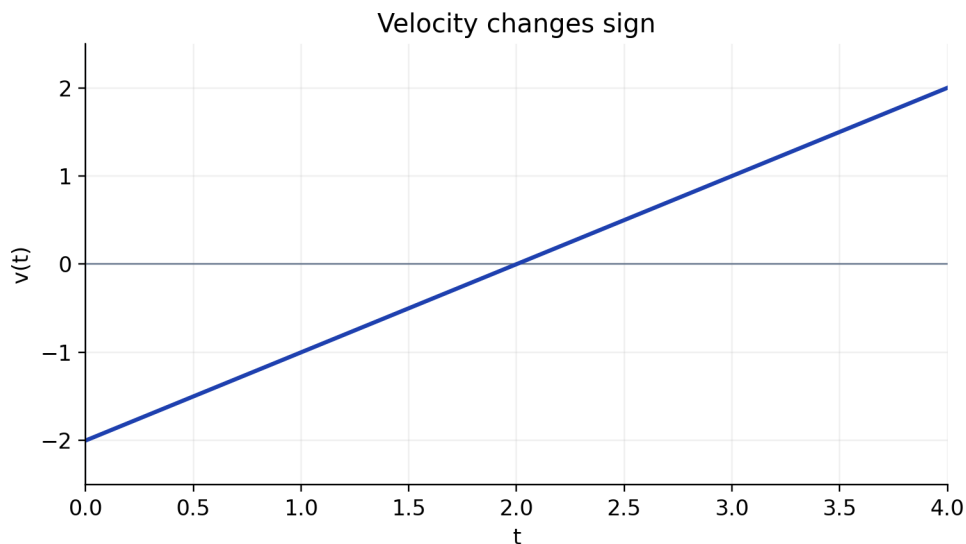
3. Find the geometric area between $y = x$ and the x-axis on $[-2, 1]$.

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Lesson 5.2 · Practice

No calculator required | Name: _____

4. For $v(t) = t - 2$ on $[0, 4]$, find displacement and total distance.



Use the zero of velocity to split the interval.

5. A tank starts at 10 L and has net rate $3 - t$ L/min on $[0, 4]$. Find its amount at 4.

Lesson 5.2 · Practice

No calculator required | Name: _____

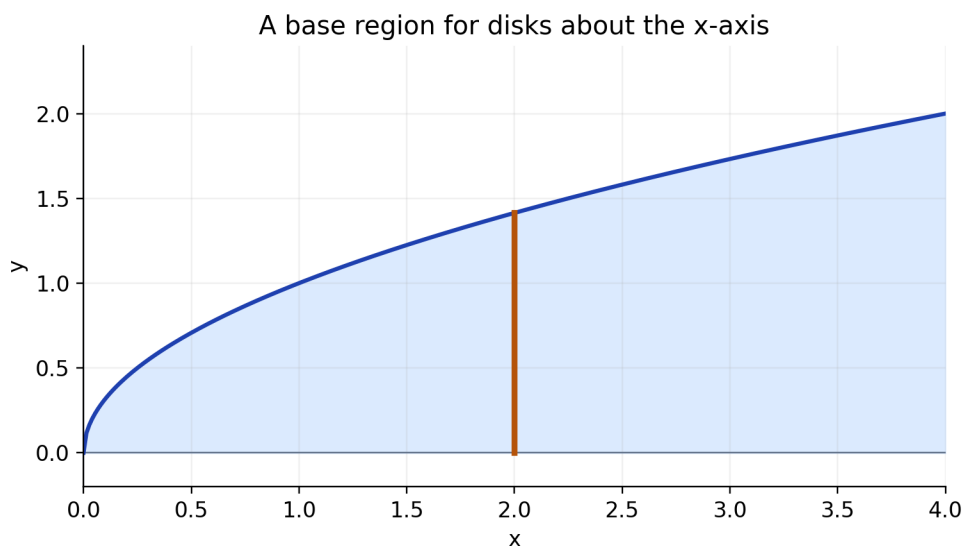
6. With the same tank data, when is the amount greatest on $[0, 4]$, and what is it?

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Lesson 5.3 · Practice

No calculator required | Name: _____

7. Rotate the region under $y = \sqrt{x}$ on $[0, 4]$ about the x-axis. Find the volume.



A vertical slice rotates into a disk about the x-axis.

8. Rotate the region between $y = 3$ and $y = x$ on $[0, 3]$ about the x-axis.

Lesson 5.3 · Practice

No calculator required | Name: _____

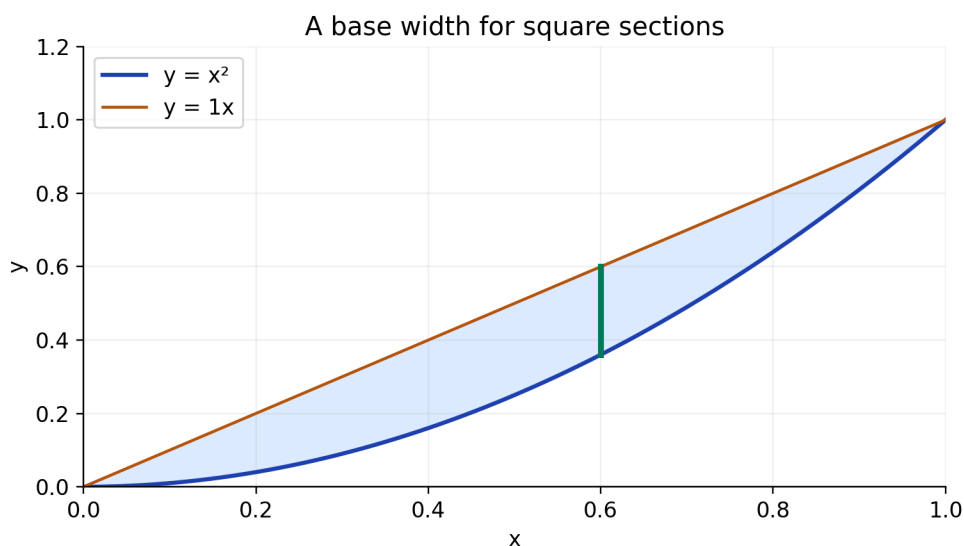
9. Rotate the region between $y = 2$ and $y = x$ on $[0, 2]$ about $y = 2$.

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Lesson 5.4 · Practice

No calculator required | Name: _____

- 10.** The base is between $y = x$ and $y = x^2$ on $[0, 1]$. Perpendicular square sections have a side equal to the base width. Find the volume.



Each vertical width becomes the side of a square section.

- 11.** For the same base, use semicircular sections with diameter equal to the width. Find the volume.

Lesson 5.4 · Practice

No calculator required | Name: _____

12. A solid has triangular sections with base x and height $2x$ for $0 \leq x \leq 3$. Find its volume.

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