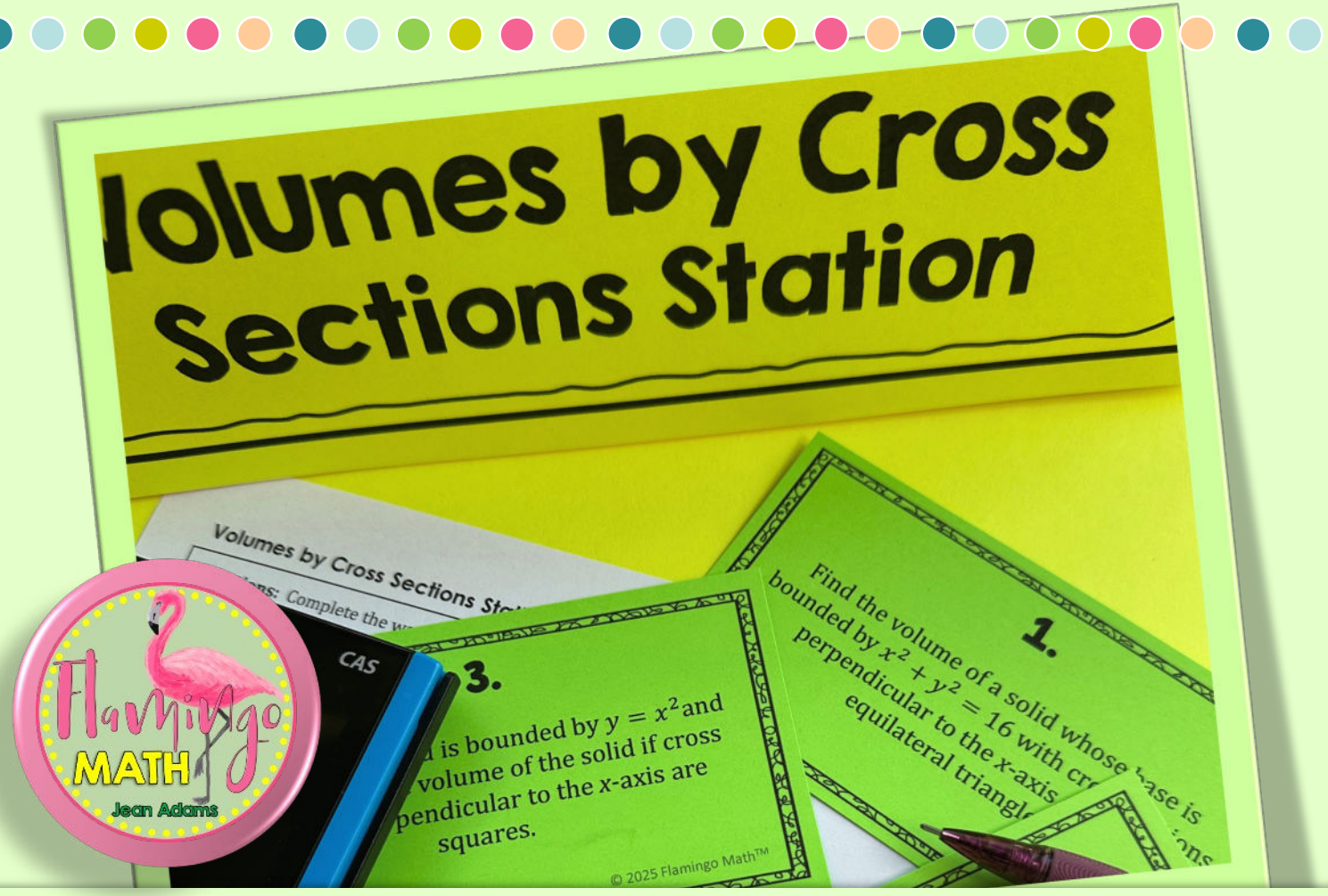
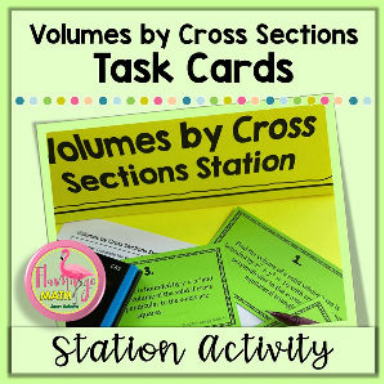
Volumes by Cross Sections

Task Cards



Station Activity

Volumes by Cross Sections Station Cards



KEY CONCEPTS/TOPICS:
★ Find volumes of solids by cross sections

Standards:

TOPIC 8.7: Volumes with Cross Sections: Squares and Rectangles
TOPIC 8.8: Volumes with Cross Sections: Triangles and Semicircles

Product Overview

Volumes by Cross Sections Stations

PREPARATION:
Copy a student recording sheet for supporting work, if you want that accountability.
Copy a set of cards on card stock.
Cut apart cards and laminate for durability.
Place cards in a zipped bag for organization.

GENERAL DIRECTIONS:
Students are given a set of cards with a volume to be found using a specified cross-section. Students work cooperatively to find the volume of the shape. There is a student recording sheet to support work.

Answer Key:

1.	147.80166	**4.**	$4\pi \approx 12.566$
2.	4.5	**5.**	256
3.	$\frac{512}{15} \approx 34.133$	**6.**	16

Tape this edge to the opposite side to create a table tent

Copy this "table tent" on a colorful piece of cardstock. Then fold the tent lengthwise along the dotted lines. Tape the folded "flap" to secure a triangular shaped tent for the table.

Fold here

Volumes by Cross Sections Station

Volumes by Cross Sections Station

Volumes by Cross Sections Stations Name:

Directions: Complete the work for each card and record your answers below.

1.	2.
3.	
5.	6.

1.

Find the volume of a solid whose base is bounded by $x^2 + y^2 = 16$ with cross sections perpendicular to the x-axis that are equilateral triangles.

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2.

Find [illegible] bounded by [illegible] $y = 2 -$ [illegible] $y =$ [illegible] with [illegible] perpendicular to the x-axis that are [illegible] triangles of height 3.

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3.

[illegible] base [illegible] bounded by $y = x^2$ and $= 4$. [illegible] the volume of the solid if cross sections perpendicular to the x-axis are squares.

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4.

The base of a solid is bounded by $y = x^2$ and $y = 4$. Find the volume of the solid if cross sections perpendicular to the x-axis are semi-circles.

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5.

The base of a solid is bounded by $x = y^2$ and $x = 16$. Find the volume if cross sections perpendicular to the x-axis are isosceles right triangles with one congruent side in the xy-plane.

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6.

The base of a solid is the region enclosed by the ellipse $9x^2 + y^2 = 9$. Find the volume of the solid if cross sections perpendicular to the y-axis are squares.

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Preview
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