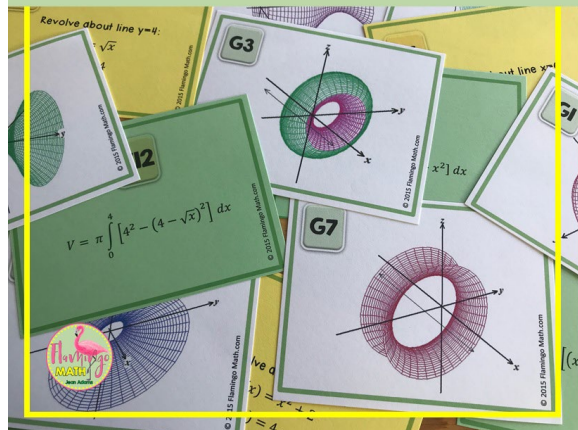


Solids of Revolution Task Cards



Solids of Revolution Match-Up Task Cards Activity

Your AP Calculus students will have an engaging cooperative activity to match and sort through a graph card, an equation card, and a volume card to create a unique matching set.

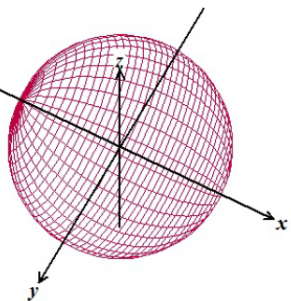
SOLIDS OF REVOLUTION MATCH-UP ACTIVITY

This activity is designed to help your **Calculus** students with visualizing **volumes of solids** when rotated about an axis or line. There are 36 task cards in the activity. The cards are sorted into sets of a graph, an equation, and a volume formula card. An answer key and a student recording sheet is included.

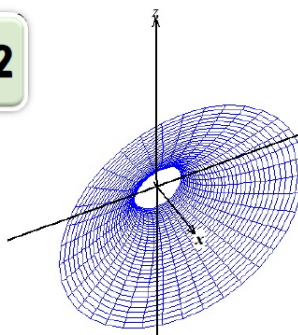
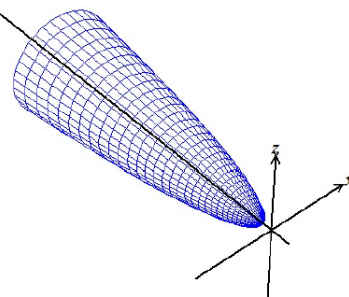
As an extension, students can graph the two-dimensional equations and calculate each volume for a follow-up activity.

NOTE: The graph cards can be sorted between 2-dimensional or 3-dimensional options. You can choose which approach works best for your students.

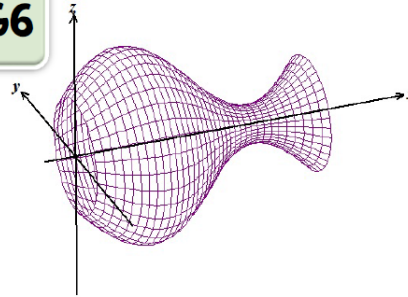


G1

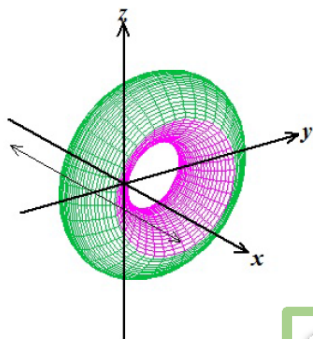
© 2015 Flamingo Math.com

G2**G5**

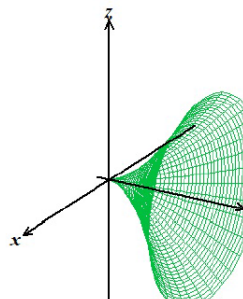
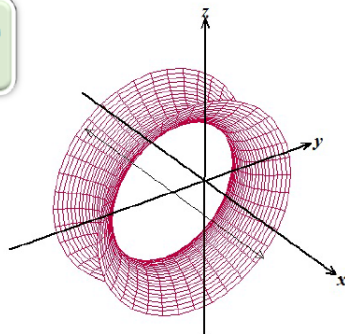
© 2015 Flamingo Math.com

G6

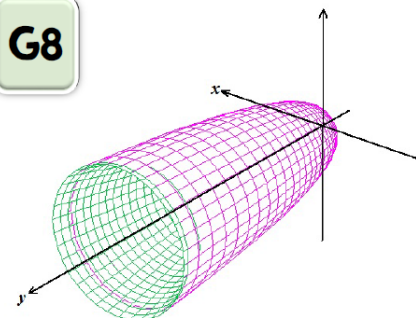
© 2015 Flamingo Math.com

G3

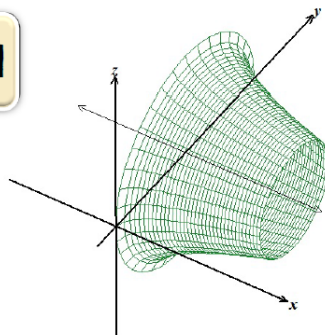
© 2015 Flamingo Math.com

G4**G7**

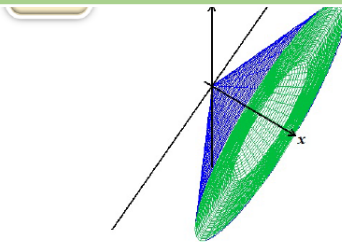
© 2015 Flamingo Math.com

G8

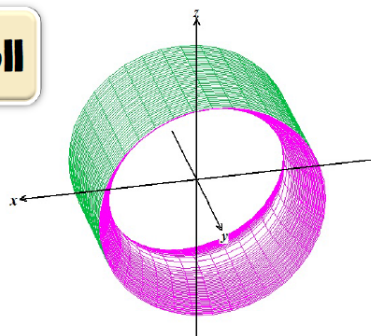
© 2015 Flamingo Math.com

G9

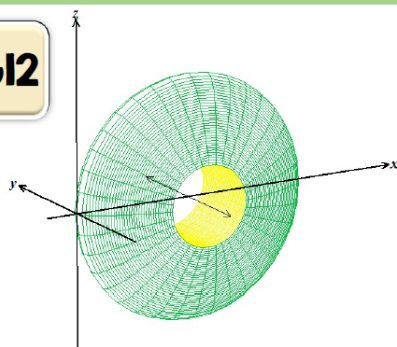
© 2015 Flamingo Math.com



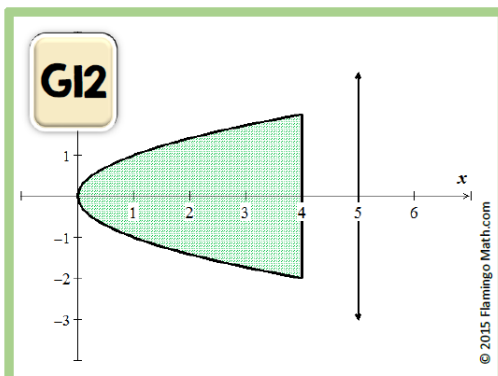
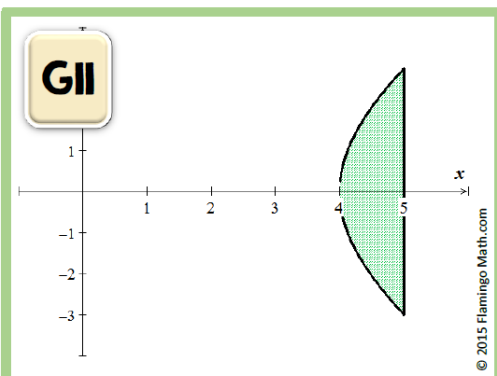
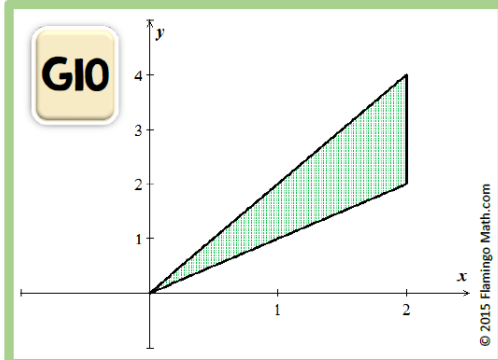
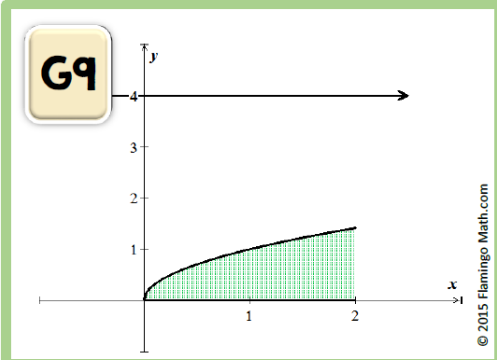
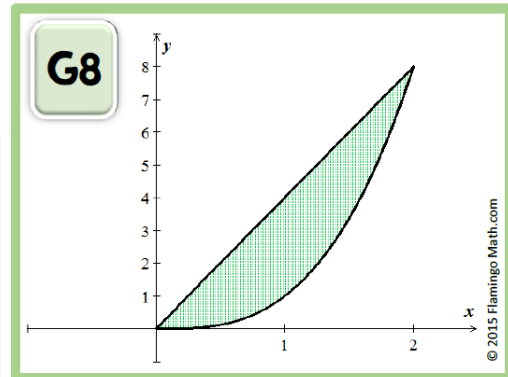
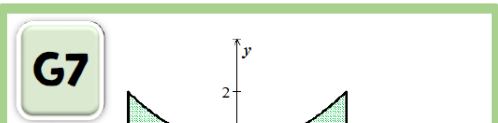
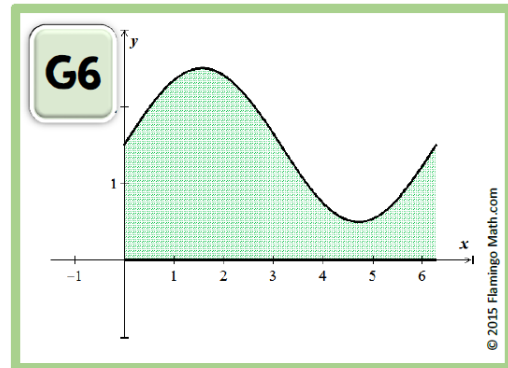
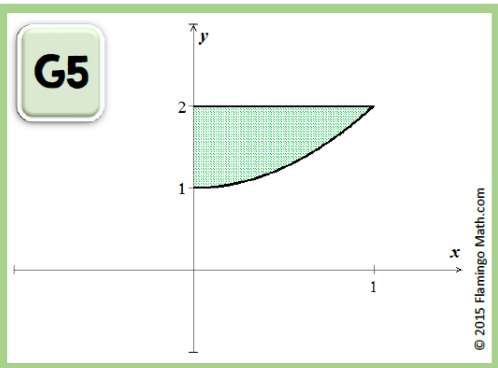
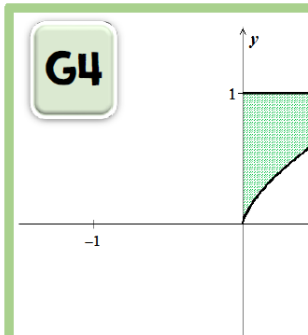
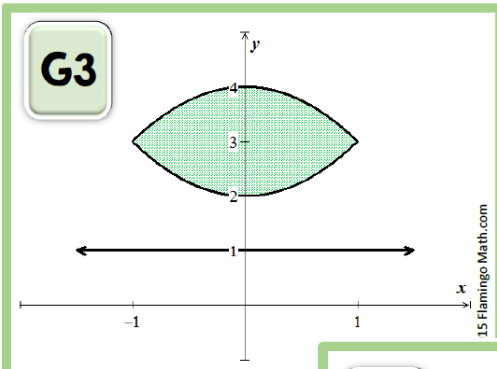
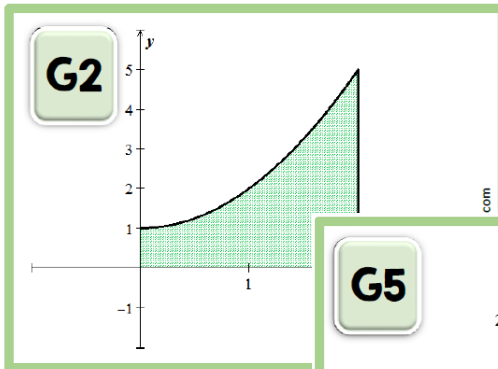
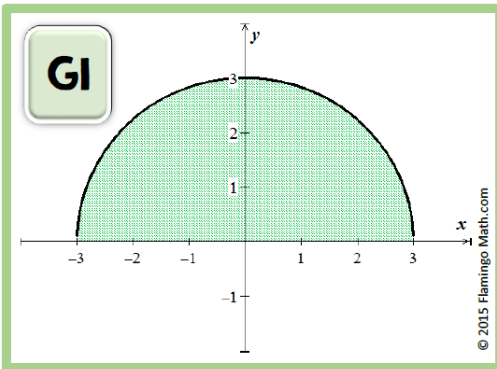
© 2015 Flamingo Math.com

G11

© 2015 Flamingo Math.com

G12

© 2015 Flamingo Math.com



E1Revolve about line $y = -1$

$$y = x^2 + 1 \text{ bounded by}$$

$$x = -1, x = 1, y = 0$$

© 2015 Flamingo Math.com

E2Revolve about line $y = 4$:

$$y = \sqrt{x}$$

$$x = 4$$

© 2015 Flamingo Math.com

Revolve about x-axis:

$$y = \sqrt{9 - x^2}$$

© 2015 Flamingo Math.com

E6Revolve about line $x = 6$

$$x = y^2$$

$$x = 4$$

© 2015 Flamingo Math.com

E3

Revolve about y-axis:

$$x = y^{\frac{3}{2}}$$

$$y = 1$$

© 2015 Flamingo Math.com

E4

Revolve about y-axis:

$$x^2 - y^2 = 16$$

$$x = 5$$

© 2015 Flamingo Math.com

Revolve about y-axis:

$$x = \sqrt{y - 1}$$

$$y = 2$$

© 2015 Flamingo Math.com

E8

Revolve about x-axis:

$$y = 2x$$

$$y = x$$

$$x = 2$$

© 2015 Flamingo Math.com

E9

Revolve about x-axis:

$$y = x^2 + 1$$

$$x = 2$$

© 2015 Flamingo Math.com

Revolve about line $y = 1$:

$$f(x) = x^2 + 2$$

$$g(x) = 4 - x^2$$

© 2015 Flamingo Math.com

E11

Revolve about y-axis:

$$f(x) = x^3$$

$$g(x) = 4x$$

© 2015 Flamingo Math.com

E12

Revolve about x-axis:

$$y = \sin x + 1.5$$

© 2015 Flamingo Math.com

VI

$$V = \pi \int_0^{2\pi} (\sin x + 1.5)^2 dx$$

© 2015 Flamingo Math.com

V2

$$V = \pi \int_0^1 \left(y^{\frac{3}{2}}\right)^2 dy$$

© 2015 Flamingo Math.com

V5

$$x^2)^2 - (x^2 + 1)^2] dx$$

© 2015 Flamingo Math.com

V6

$$V = \pi \int_0^2 [(2x)^2 - x^2] dx$$

© 2015 Flamingo Math.com

V3

$$V = 2\pi \int_0^3 (9 - x^2) dx$$

© 2015 Flamingo Math.com

V4

$$V = \pi \int_0^8 \left[(\sqrt[3]{y})^2 - \left(\frac{y}{4}\right)^2 \right] dy$$

© 2015 Flamingo Math.com

V7**V8**

$$V = \pi \int_{-1}^1 [(x^2 + 2)^2 - (-1)^2] dx$$

© 2015 Flamingo Math.com

V9

$$V = \pi \int_1^2 (y - 1) dy$$

© 2015 Flamingo Math.com

VI0

$$V = \pi \int_0^2 (x^4 + 2x^2 + 1) dx$$

© 2015 Flamingo Math.com

VII

$$V = \int_{-2}^2 [(6 - y^2)^2 - 2^2] dy$$

© 2015 Flamingo Math.com

VI2

$$V = \pi \int_0^4 [4^2 - (4 - \sqrt{x})^2] dx$$

© 2015 Flamingo Math.com

Solids of evolution Match-Up

Names: _____

GRAPH	EQUATION	VOLUME
G 1		
G 2		
G 3		
G 4		
G 5		
G 6		
G 7		
G 8		
G 9		
G 10		
G 11		
G 12		

It's A Solids of Revolution Match-Up Name: _____

1. Revolve $y = x^2 + 1$, $x = -1$, $x = 1$, and $y = 0$ about the line $y = -1$.	2. Revolve $y = \sqrt{x}$, $y = 1$, and $x = 4$ about $y = 1$.
3. Revolve $x = y^2$ and $y = 1$ about the y -axis.	4. Revolve $x^2 - y^2 = 16$ and $x = 6$ about $y = 6$.
5. Revolve $y = \sqrt{9 - x^2}$ about the y -axis.	6. Revolve $x = y^2$ and $x = 4$ about the line $x = 6$.

p2

7. Revolve $x = 1$ and $y = 2$ about the y -axis.	8. Revolve $y = 2x$, $y = x$, and $x = 2$ about the y -axis.
9. Revolve $y = x^2 + 1$ and $x = 2$ about the y -axis.	10. Revolve $f(x) = x^2 + 2$ and $g(x) = 4 - x^2$ about the line $y = 1$.
11. Revolve $f(x) = x^2$ and $g(x) = 4x$ about the y -axis.	12. Revolve $y = \sin x + 15$ about the y -axis using a graphing calculator.