

Directions: Begin in cell #1. In each cell the boundary of region R will be defined using functions and/or vertical lines and the axis of rotation will be specified. Sketch region R, setup the definite integral(s) to find the volume described and evaluate your definite integral(s). To advance in the circuit, find your answer and write 2 in the blank. Continue in this manner until you complete the circuit. You may use technology to evaluate only on those marked (\*\*), if you need extra space, attach a separate sheet with your work and the question number clearly marked.

<p>Answer: <math>\frac{56}{3}\pi</math></p> <p>#1 Region R is bounded by the lines <math>y = 4</math>, <math>x = 6</math>, the <math>y</math>-axis and the <math>x</math>-axis. Region R is rotated about the <math>x</math>-axis.</p>	<p>Answer: <math>6\pi</math></p> <p># _____ Region R is bounded by the lines <math>y = 4</math>, <math>x = 1</math>, <math>x = 6</math> and the <math>x</math>-axis. Region R is rotated about the <math>x</math>-axis.</p>
<p>Answer: <math>\frac{32}{5}\pi</math></p> <p># _____ Region R is bounded by <math>y = x^2</math>, the <math>y</math>-axis and the line <math>y = 4</math>. Region R is rotated about the <math>x</math>-axis.</p>	<p>Answer: <math>\frac{8}{3}\pi</math></p> <p># _____ Region R is bounded by the lines <math>y = 4</math>, <math>x = 6</math>, the <math>y</math>-axis and the <math>x</math>-axis. Region R is rotated about the line <math>x = 8</math>.</p>
<p>Answer: <math>\frac{81}{2}\pi</math></p> <p># _____ Region R is bounded by <math>y = x^2</math>, the <math>x</math>-axis and the line <math>x = 2</math>. Region R is rotated about the line <math>x = 2</math>.</p>	<p>Answer: <math>192\pi</math></p> <p># _____ **Region R is bounded by <math>y = x^2</math>, the <math>x</math>-axis and the line <math>x = 2</math>. Region R is rotated about the line <math>y = 4</math>.</p>

<p>Answer: <math>\frac{224}{15}\pi</math></p> <p># _____ **Region R is bounded by <math>y = x^2</math>, the <math>x</math>-axis and the line <math>x = 2</math>. Region R is rotated about the line <math>y = -3</math>.</p>	<p>Answer: <math>\frac{128}{5}\pi</math></p> <p># _____ ** Region R is the area between <math>y = x^2</math> and <math>y = 4x - x^2</math> in the first quadrant. Region R is rotated about <math>x</math>-axis.</p>
<p>Answer: <math>\frac{112}{5}\pi</math></p> <p># _____ ** Region R is the area between <math>y = x^2</math> and <math>y = 4x - x^2</math> in the first quadrant. Region R is rotated about the line <math>y = 6</math>.</p>	<p>Answer: <math>240\pi</math></p> <p># _____ Region R is bounded by <math>y = x^2</math>, the <math>x</math>-axis and the line <math>x = 2</math>. Region R is rotated about the line <math>x = -2</math>.</p>
<p>Answer: <math>144\pi</math></p> <p># _____ **Region R is bounded by the lines <math>y = -\frac{3}{2}x + 3</math>, the <math>y</math>-axis and the <math>x</math>-axis. Region R is rotated about the <math>y</math>-axis.</p>	<p>Answer: <math>96\pi</math></p> <p># _____ Region R is bounded by the lines <math>y = -\frac{3}{2}x + 3</math>, the <math>y</math>-axis and the <math>x</math>-axis. Region R is rotated about the <math>x</math>-axis.</p>

<p>Answer: <math>8\pi</math></p> <p># _____ Region R is bounded by the lines <math>y = 4</math>, <math>x = 1</math>, <math>x = 6</math> and the <math>x</math>-axis. Region R is rotated about the <math>y</math>-axis.</p>	<p>Answer: <math>80\pi</math></p> <p># _____ Region R is bounded by <math>y = x^2</math>, the <math>x</math>-axis and the line <math>x = 2</math>. Region R is rotated about the <math>x</math>-axis.</p>
<p>Answer: <math>\frac{64}{3}\pi</math></p> <p># _____ Region R is bounded by the lines <math>y = 4</math>, <math>x = 6</math>, the <math>y</math>-axis and the <math>x</math>-axis. Region R is rotated about the <math>y</math>-axis.</p>	<p>Answer: <math>\frac{32}{3}\pi</math></p> <p># _____ Region R is bounded by the lines <math>y = 4</math>, <math>x = 6</math>, the <math>y</math>-axis and the <math>x</math>-axis. Region R is rotated about the line <math>y = -2</math>.</p>
<p>Answer: <math>140\pi</math></p> <p># _____ Region R is bounded by <math>y = x^2</math>, the <math>x</math>-axis and the line <math>x = 3</math>. Region R is rotated about the <math>y</math>-axis.</p>	<p>Answer: <math>4\pi</math></p> <p># _____ Region R is bounded by <math>y = x^2</math>, the <math>y</math>-axis and the line <math>y = 4</math>. Region R is rotated about the <math>y</math>-axis.</p>