

# Crack the Code

# Volumes of Revolution

<b>A</b>	<p>The curve <math>y = x^3</math> and the line <math>y = 2 - x</math> meet at the point <math>(1, 1)</math>. The region R is bounded by the curve <math>y = x^3</math>, the line <math>y = 2 - x</math> and the <math>x</math>-axis. Find the exact volume of the solid formed when R is rotated <math>360^\circ</math> about the <math>x</math>-axis.</p> <p><math>\frac{10}{21}\pi</math></p>	<b>B</b>	<p>The region R is bounded by the curve <math>y = 2\sqrt{x}</math> and the line <math>y = x</math>. Find the exact volume of the solid formed when the region R is rotated <math>2\pi</math> radians about the <math>x</math>-axis.</p> <p><math>\frac{32}{3}\pi</math></p>
<b>C</b>	<p>The region R is formed between the circle <math>x^2 + y^2 = 25</math>, the line <math>y = \frac{4}{3}x</math> and the positive <math>y</math>-axis. Find the exact volume of the solid formed when the region R is rotated <math>2\pi</math> radians about the <math>y</math>-axis.</p> <p><math>\frac{50}{3}\pi</math></p>	<b>D</b>	<p>The region R is bounded by the curve <math>y = \sqrt{x}</math>, the line <math>\frac{1}{2}x + y = 4</math> and the positive <math>y</math>-axis. Find the exact volume of the solid formed when the region R is rotated <math>360^\circ</math> about the <math>y</math>-axis.</p> <p><math>\frac{136}{15}\pi</math></p>
<b>E</b>	<p>The region R is formed between the curves <math>y = x^2</math> and <math>y = 3 - 2x^2</math>. Find the exact volume of the solid formed when the region R is rotated <math>2\pi</math> radians about the <math>y</math>-axis.</p> <p><math>2\pi</math></p>	<b>F</b>	<p>The region R is formed between the curves <math>y^2 = x</math> and <math>y = x^2</math> and the <math>x</math>-axis. Find the exact volume of the solid formed when the region R is rotated <math>2\pi</math> radians about the <math>x</math>-axis.</p> <p><math>\frac{3}{10}\pi</math></p>

Add all your answers together, then multiply by 21 and divide by  $\pi$ . To get the three-digit code, round your answer to the nearest integer.