## Crack the Code

## Volumes of Revolution

A	The curve $y=x^3$ and the line $y=2-x$ meet at the point (1,1). The region R is bounded by the curve $y=x^3$ , the line $y=2-x$ and the $x$ -axis. Find the exact volume of the solid formed when R is rotated $360^\circ$ about the $x$ -axis.	В	The region R is bounded by the curve $y=2\sqrt{x}$ and the line $y=x$ . Find the exact volume of the solid formed when the region R is rotated $2\pi$ radians about the $x$ -axis.
C	The region R is formed between the circle $x^2 + y^2 = 25$ , the line $y = \frac{4}{3}x$ and the positive $y$ -axis. Find the exact volume of the solid formed when the region R is rotated $2\pi$ radians about the $y$ -axis.	D	The region R is bounded by the curve $y=\sqrt{x}$ , the line $\frac{1}{2}x+y=4$ and the positive $y$ -axis. Find the exact volume of the solid formed when the region R is rotated $360^\circ$ about the $y$ -axis.
E	The region R is formed between the curves $y=x^2$ and $y=3-2x^2$ . Find the exact volume of the solid formed when the region R is rotated $2\pi$ radians about the $y$ -axis.	F	The region R is formed between the curves $y^2 = x$ and $y = x^2$ and the $x$ -axis. Find the exact volume of the solid formed when the region R is rotated $2\pi$ radians about the $x$ -axis.

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.