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| **Crack the Code** | **Volumes of Revolution** |

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| **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 $360°$ about the $x$-axis. | **B** | 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 $2π$ 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 $2π$ 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 $360°$ 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 $2π$ 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 $2π$ radians about the $x$-axis. |
| Add all your answers together, then multiply by 21 and divide by $π$. To get the three-digit code, round your answer to the nearest integer. |