

## RATIO

- 2008A 2. **Answer (A):** Let  $x$  be the side length of the square. Then the area of the square is  $x^2$ . The rectangle has sides of length  $2x$  and  $4x$ , and hence area  $8x^2$ . The fraction of the rectangle's area inside the square is  $\frac{x^2}{8x^2} = \frac{1}{8}$  or 12.5%.
- 2016A 5. **Answer (D):** Let the dimensions of the box be  $x$ ,  $3x$ , and  $4x$ . Then the volume of the box is  $12x^3$ . Therefore the volume must be 12 times the cube of an integer. Among the choices, only  $48 = 4 \cdot 12$ ,  $96 = 8 \cdot 12$ , and  $144 = 12 \cdot 12$  are multiples of 12, and only for 96 is the other factor a perfect cube.