Calculate the dot product of vector A with vector B by hand.

$$\mathbf{A} = [1, 3, 5] \qquad \mathbf{B} = [6, 4, 2]$$

$$\mathbf{A} \cdot \mathbf{B} = ?$$

$$A \cdot B = (A_x)(B_x) + (A_y)(B_y) + (A_z)(B_z)$$

$$(1)(6) + (3)(4) + (5)(2)$$

$$\boxed{A \cdot B = 28}$$