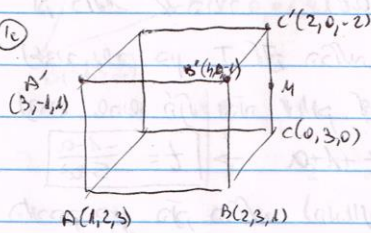


3.95

1

①



$$C' = C + \vec{AA'} = (0, 3, 0) + (2, -3, -2) = (2, 0, -2)$$

$$\vec{CC'} = (2, -3, -2)$$

$$M = (1, 1\frac{1}{2}, -1)$$

$$(2, -3, 2) \quad \text{1/2 nomen de 2/2}$$

$$M \rightarrow \text{val}$$

$$Q = 2x - 3y - 2z + \frac{1}{2}$$

$$Q = 4x - 6y - 4z + 1$$

$$\textcircled{2} \quad \vec{BC} = (0, 3, 0) + (-4, 3, 1)$$

$$\vec{B'} = B + \vec{AA'} = (2, 3, 1) + (2, -3, -2) = (4, 0, -1)$$

$$\sin \alpha = \frac{|(-4, 3, 1) \cdot (4, 0, -1)|}{\sqrt{26} \cdot \sqrt{68}} = \frac{38}{\sqrt{26 \cdot 68}} = \frac{19}{\sqrt{448}}$$

③

$$S_{A'B'C'} = \frac{1}{2} S_{ABCD} = \frac{1}{2} |\vec{AB} \times \vec{BC}| = \frac{1}{2} \left| \begin{vmatrix} i & j & k \\ 1 & 1 & -2 \\ 2 & 0 & 1 \end{vmatrix} \right| = \frac{1}{2} \sqrt{1+25+4} = \frac{1}{2} \sqrt{30}$$

$$\begin{array}{l} \vec{AB} \\ \vec{BC} \end{array} \begin{vmatrix} x-2 & y & z+2 \\ 1 & 1 & -2 \\ 2 & 0 & 1 \end{vmatrix} = \begin{array}{l} A'B'C' \text{ nomen, } A'B'C' \text{ nomen} \\ x-2-5y-2z-4=0 \\ x-5y-2z-6=0 \end{array}$$

$$h = \frac{|-15-6|}{\sqrt{30}} = \frac{21}{\sqrt{30}}$$

$$V = \frac{1}{3} S_{A'B'C'} \cdot h = \frac{1}{3} \cdot \frac{1}{2} \sqrt{30} \cdot \frac{21}{\sqrt{30}} = \frac{7}{2}$$