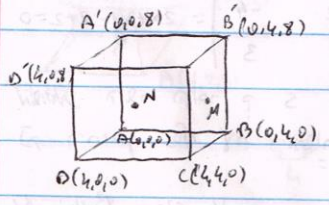
4.22

5



$M=(2,4,4)$ $N(4,2,4)$ ①

$B'=(0,4,8)$

מציאת משוואת המישור $B'NM$:

$$\begin{vmatrix} x & y-4 & z-8 \\ 2 & 0 & -4 \\ 4 & -2 & -4 \end{vmatrix} = 0$$

$0 = -8x - 8(y-4) - 4(z-8) \rightarrow 2x+2y+z=16$

$\frac{x}{2} = \frac{y}{2} = z \leftarrow l: x=(2,2,1)$ ②

$\cos\alpha = \frac{(2,0,-4)\cdot(4,-2,-4)}{\sqrt{20}\sqrt{36}} = \frac{24}{\sqrt{20}\sqrt{36}} = \frac{4}{\sqrt{20}} = \frac{2}{\sqrt{5}}$ ④

$S_{B'MN} = \frac{1}{2}\left|\vec{B'N}\times\vec{B'M}\right| = \frac{1}{2}\sqrt{8^2+8^2+4^2} = 6$ ③

$d = \frac{16}{3}$ המרחק מנקודה A למישור $B'MN$

$V = \frac{1}{3}\cdot 6\cdot\frac{16}{3} = \frac{32}{3}$