

: AB הוקטור את (3, 9, 4)

$$B: (-2, 8, -3) + t(1, -1, 2)$$

$(-2+t, 8-t, -3+2t)$ ל \vec{BC} הוקטור
 הוקטור \vec{BC} את (3, 9, 4)

$$(3 - (-2+t), 9 - (8-t), 4 - (-3+2t)) =$$

$$(5-t, 1+t, 7-2t)$$

ל \vec{BC} הוקטור את (3, 9, 4)

$$0 = (1, -1, 2) \cdot (5-t, 1+t, 7-2t)$$

$$0 = 5 - t - 1 - t + 14 - 4t = 18 - 6t$$

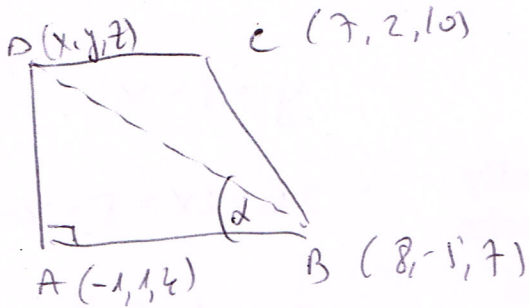
$$t = 3$$

$(1, 5, 3)$: B הוקטור את (3, 9, 4)

$$\textcircled{2} S_{\triangle ABC} = \frac{|\vec{AB}| \cdot |\vec{BC}|}{2} = \frac{|(3, -3, 6)| \cdot |(2, 4, 1)|}{2} =$$

$$\frac{\sqrt{54} \cdot \sqrt{21}}{2} = 16.837$$

25
 (515) (10)



$$\vec{AB} = (9, -6, 3)$$

$$\vec{DC} = \alpha \vec{AB} \Rightarrow (7-x, 2-y, 10-z) = (9\alpha, -6\alpha, 3\alpha) \Rightarrow \begin{cases} 7-x = 9\alpha \\ 2-y = -6\alpha \\ 10-z = 3\alpha \end{cases}$$

$$AB \perp AD \quad \text{ist 33N}$$

$$\begin{cases} x = 7 - 9\alpha \\ y = 2 + 6\alpha \\ z = 10 - 3\alpha \end{cases}$$

$$\vec{AD} = (x+1, y-1, z-4)$$

$$0 = (x+1, y-1, z-4) \cdot (9, -6, 3)$$

$$0 = 9x + 9 - 6y + 6 + 3z - 12$$

$$0 = 9(7-9\alpha) + 9 - 6(2+6\alpha) + 6 + 3(10-3\alpha) - 12$$

$$0 = 63 - 81\alpha + 9 - 12 - 36\alpha + 6 + 30 - 9\alpha - 12$$

$$126\alpha = 84$$

$$\alpha = \frac{2}{3} \rightarrow \begin{cases} x = 7 - 9 \cdot \frac{2}{3} = 1 \\ y = 2 + 6 \cdot \frac{2}{3} = 6 \\ z = 10 - 3 \cdot \frac{2}{3} = 8 \end{cases} \quad D(1, 6, 8)$$

$$\textcircled{2} \quad \vec{DB} = (7, -11, -1)$$

$$\cos \alpha = \frac{|\vec{DB} \cdot \vec{AB}|}{|\vec{DB}| \cdot |\vec{AB}|} = \frac{|(7, -11, -1) \cdot (9, -6, 3)|}{|(7, -11, -1)| \cdot |(9, -6, 3)|} = \frac{126}{\sqrt{171} \sqrt{126}}$$

$$\boxed{\alpha = 30.86}$$