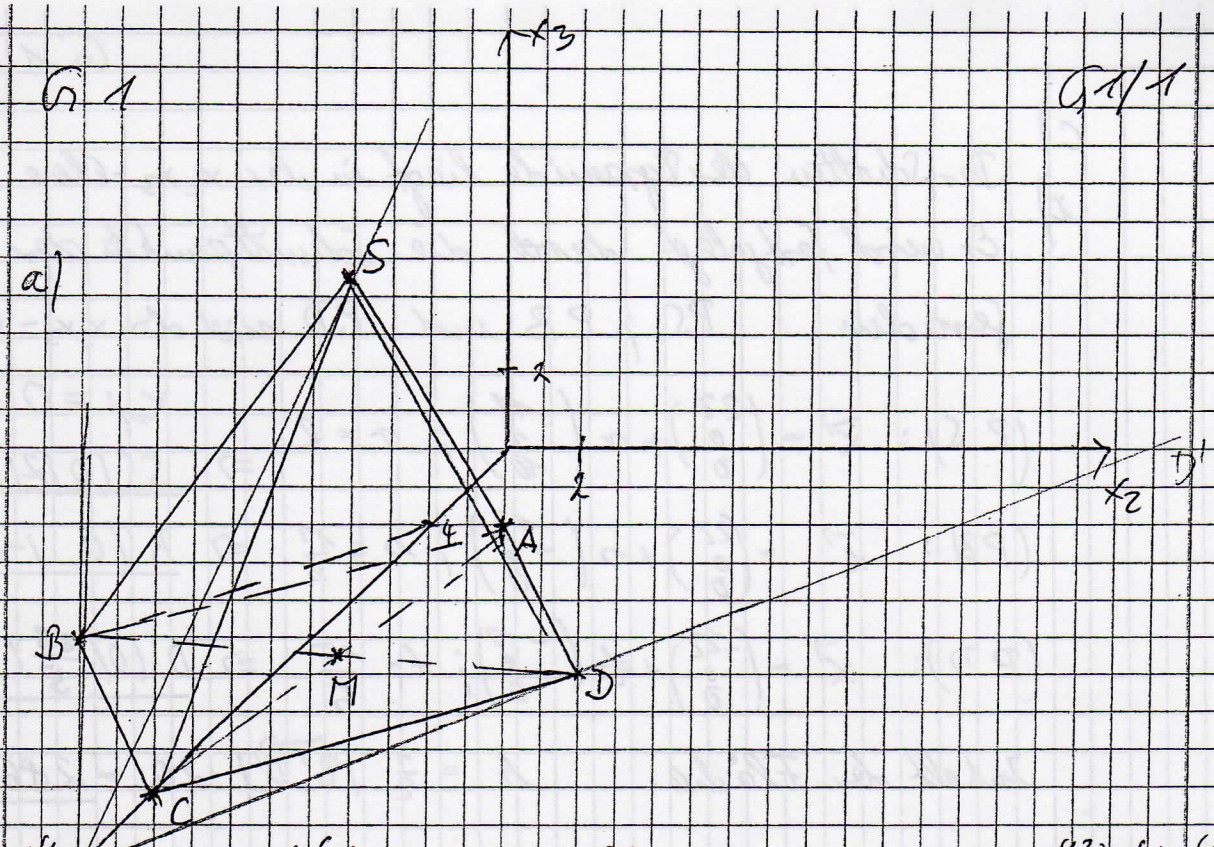
a)



$\overrightarrow{AB} = \begin{pmatrix} 6 \\ -8 \\ 0 \end{pmatrix}$; $\overrightarrow{AD} = \begin{pmatrix} 8 \\ 6 \\ 0 \end{pmatrix}$; $\overrightarrow{OC} = \overrightarrow{OD} + \overrightarrow{AB} = \begin{pmatrix} 12 \\ 8 \\ 0 \end{pmatrix} + \begin{pmatrix} 6 \\ -8 \\ 0 \end{pmatrix} = \begin{pmatrix} 18 \\ 0 \\ 0 \end{pmatrix}$

$M_{BD}(11|1|0) \Rightarrow S(11|11|10)$

$|\overrightarrow{AB}| = 10$; $|\overrightarrow{AS}| = \left| \begin{matrix} 7 \\ -1 \\ 10 \end{matrix} \right| = \sqrt{150}$

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b) E_1 (ABS): $\vec{x} = \begin{pmatrix} 4 \\ 2 \\ 0 \end{pmatrix} + r\begin{pmatrix} 6 \\ -8 \\ 0 \end{pmatrix} + s\begin{pmatrix} 7 \\ -1 \\ 10 \end{pmatrix}$

E_2 (ADS): $\vec{x} = \begin{pmatrix} 4 \\ 2 \\ 0 \end{pmatrix} + t\begin{pmatrix} 8 \\ 6 \\ 0 \end{pmatrix} + u\begin{pmatrix} 7 \\ -1 \\ 10 \end{pmatrix}$

E_1: $8x_1 + 6x_2 - 5x_3 = 44$

E_2: $6x_1 - 8x_2 - 5x_3 = 8$

$\sphericalangle(E_1; E_2)$: $\cos\alpha = \dfrac{\left| \begin{pmatrix} 8 \\ 6 \\ -5 \end{pmatrix} \cdot \begin{pmatrix} 6 \\ -8 \\ -5 \end{pmatrix} \right|}{\sqrt{125} \cdot \sqrt{125}} = \frac{1}{5}$

$\underline{\alpha \approx 78{,}46^\circ}$