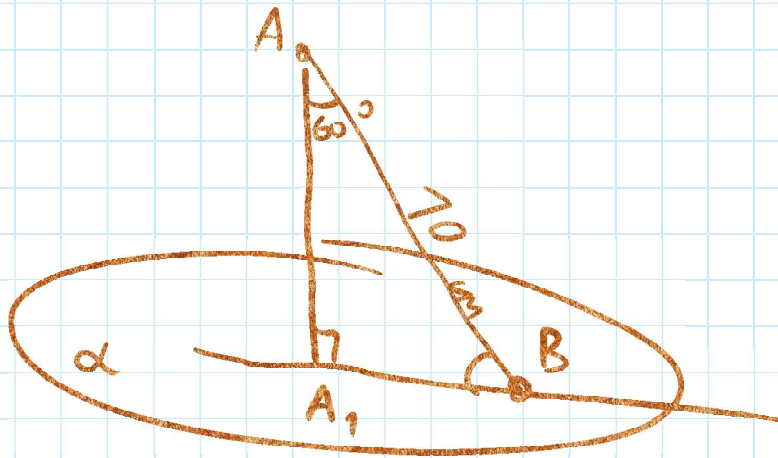


1)



$$\text{в } \triangle AA_1B (\angle A_1 = 90^\circ)$$

$$\angle B = 30^\circ \Rightarrow$$

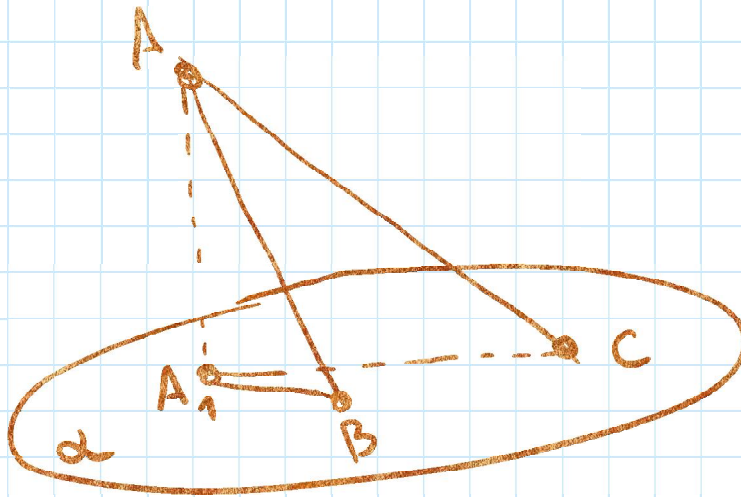
$$\Rightarrow AA_1 = \frac{1}{2} AB = 5 \text{ cm}$$

$$A_1B^2 = AB^2 - AA_1^2$$

$$A_1B^2 = 10^2 - 5^2$$

$$A_1B = 5\sqrt{3} \text{ cm}$$

2)



$$\text{Пусто } AC > AB$$

$$\text{из } \triangle AA_1C (\angle A_1 = 90^\circ)$$

$$A_1C^2 = AC^2 - AA_1^2$$

$$A_1B^2 = AB^2 - AA_1^2$$

$$\text{из } \triangle AA_1B (\angle A_1 = 90^\circ):$$

$$\text{т.к. } AC > AB \Rightarrow AC^2 - AA_1^2 > AB^2 - AA_1^2 \Rightarrow$$

$$\Rightarrow A_1C^2 > A_1B^2 \Rightarrow A_1C > A_1B$$