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**11-Mavzu: UCHBURCHAKNING BURCHAKLARI  
BILAN ULAR QARSHISIDAGI TOMONLARI  
ORASIDAGI MUNOSABAT**



**Uchburchakda katta burchak qarshisida katta tomon yotadi, katta tomon qarshisida katta burchak yotadi.**

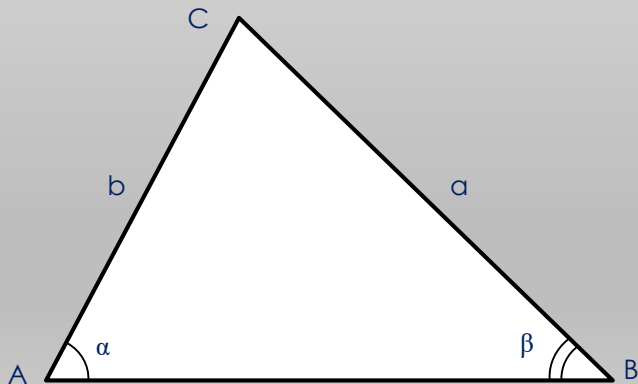
*a* va *b* uchburchakning ikkita tomoni va  $\alpha$ ,  $\beta$  – ular qarshisidagi burchaklar bo`lsin. Agar  $\alpha > \beta$  bo`lsa,  $a > b$  bo`lishini isbotlaymiz. Va aksincha: agar  $a > b$  bo`lsa,  $\alpha > \beta$  bo`lishini isbotlaymiz.

Agar  $\alpha$  va  $\beta$  burchaklar o`tkir burchaklar bo`lsa (1-rasm), u holda  $\alpha > \beta$  da  $\sin\alpha > \sin\beta$  bo`ladi:

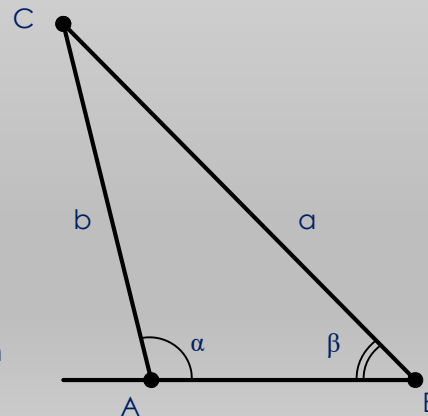
$$\frac{\sin\alpha}{a} = \frac{\sin\beta}{b}$$

bo`lgani uchun  $a > b$  bo`ladi. Agar  $\alpha$  o`tkir burchak bo`lsa (ikkala burchak o`tkir bo`la olmaydi), u holda  $180^\circ - \alpha$  o`tkir burchak bo`ladi (2-rasm). Bunda  $180^\circ - \alpha$  uchburchakning  $\beta$  burchagiga qo`shni bo`lmagan tashqi burchagi bo`lgani uchun  $\beta$  dan katta. Shu sababli  $\sin\alpha = \sin(180^\circ - \alpha) > \sin\beta$ . Biz yana  $a > b$  degan xulosaga kelamiz

1-rasm



2-rasm





Teskari tasdiqni isbotlaymiz.  $a > b$  bo`lsin.  $\alpha > \beta$  ekanini isbotlash kerak.  $\alpha \leq \beta$  bo`lsin deylik. Agar  $\alpha = \beta$  bo`lsa, u holda uchburchak teng yonli va  $a = b$ . Agar  $\alpha < \beta$  bo`lsa, u holda isbotlanganiga ko`ra  $a < b$ . Ikkala holda ham zidlik kelib chiqmoda, chunki farazimizga ko`ra  $a > b$ , demak,  $\alpha > \beta$ . Shuni isbotlash talab qilingan edi.



**Masala.** Agar uchburchakning o'tmas burchagi bo'lsa, uning qarshisidagi tomon eng katta bo'lishini isbotlang.

**Yechilishi.** Uchburchakda bitta o'tmas burchak bo'lishi mumkin. Shu sababli u qolgan burchaklarining istalganidan katta bo'ladi. Demak, uning qarshisidagi tomon uchburchakning qolgan ikkita tomoning istalganidan katta bo'ladi.