TURK GEOMETRIYASI MASALALARINI YECHISH USULLARINI TAHLIL QILISH ORQALI 7-SINF GEOMETRIYA O‘QITISH METODIKASINI TAKOMILLASHTIRISH

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Annotatsiya: Mazkur maqola turk geometriyasi masalalari haqida bo‘lib, unda masalalarni yechish usullari ko‘rsatilgan. Shuningdek masala shartlari va chizmalarini chizish orqali yechish usullari ham ko‘rsatilgan. O‘quvchi masalani yechishi uchun olgan nazariy bilimlarini asos bo‘lishi ko‘rsatib o‘tilgan. Har bir masala qadamma-qadam nazariy bilimlar va chizmalar uzviyligi yordamida yechilishi ko‘rsatilgan.

Kalit so‘zlar: geometriya, chizma, burchak, to‘g‘ri chiziq, perpendikulyar, parallel, metodika, tenglik.

Аннотация: Эта статья о задачах турецкой геометрии, в которой показаны методы решения задач. Также показаны методы решения задачи путем построения условий и чертежей. Было показано, что теоретические знания, полученные студентом для решения задачи, являются основой. Показано, что каждая задача решается поэтапно с использованием теоретических знаний и непрерывности чертежей.

Ключевые слова: геометрия, рисунок, угол, прямая, перпендикуляр, параллель, методология, равенство.

Annotation: This article is about problems in Turkish geometry, which shows methods for solving problems. Methods of solving the problem by constructing conditions and drawings are also shown. It was shown that the theoretical knowledge acquired by the student to solve the problem is the basis. It is shown that each task is solved in stages using theoretical knowledge and continuity of drawings.

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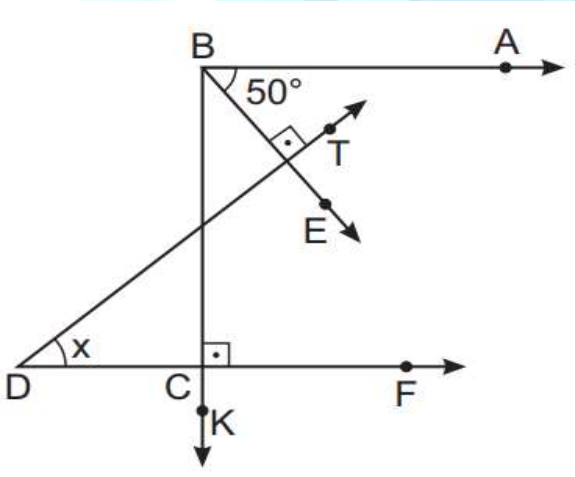
Keywords: geometry, drawing, angle, straight line, perpendicular,parallel, methodology, equality.

Asosiy matn

7-sinf geometriya o‘qitish metodikasini takomillashtirishda turk geometriyasining yechish usullari qo‘l keladi. Chunki turk geometriyasi masalalarini yechish o‘quvchini kreativ fikrlashga va masalani yechishi uchun o‘tilgan nazariy bilimlarning bir nechtasini bir vaqtda qo‘llashga o‘rgatadi.

Shu sababli fikrlab, o‘ylab, chizmaga qo‘shimchalar kiritib, chizmani bo‘laklarga bo‘lish asosida yechadigan turk geometriyasi masalalarini darsliklarimizga kiritish lozim. Fan olimpiadalarida va o‘qituvchilar attestatsiya savollari turk geometriyasi savollari uchraydi, shuning uchun darsliklarga bunday masalalar kiritish o‘qitish metodikasini takomillashishiga olib keladi. Geometriya fanini o‘zlashtirishda dastlab tekislikdagi tushunchalarga oid masalalarni yechish va isbotlash o‘rganiladi.

1-masala



$BA \parallel DF$

$BE \perp DT$

$BK \perp DF$ $m(\widehat{ABE}) = 50°$

Yuqorida berilganlarga ko‘ra <FDT=x ni toping [1]

Ushbu masalada o‘quvchi berilishiga ko‘ra o‘rgangan nazariy bilimlariga tayanadi. Berilishiga ko‘ra BA va DF to‘gri chiziqlar o‘zaro parallel, chizmadan ko‘rinib turibdiki BK to‘g‘ri chiziq parallel to‘g‘ri chiziqlarimizga perpendikulyar. DT to‘g‘ri chiziq esa parallel to‘g‘ri chiziqlarni x burchak ostida kesib o‘tyapti. Chizma va berilganlar asosida:

1-usul. DT to‘g‘ri chiziq BA to‘g‘ri chiziqni x burchak ostida kesib o‘tadi;
DT to‘g‘ri chiziq BE to‘g‘ri chiziq bilan 90^0 burchak ostida kesishgan;
<EBA=50^0 ekanligidan x=40^0 ga teng bo‘ladi

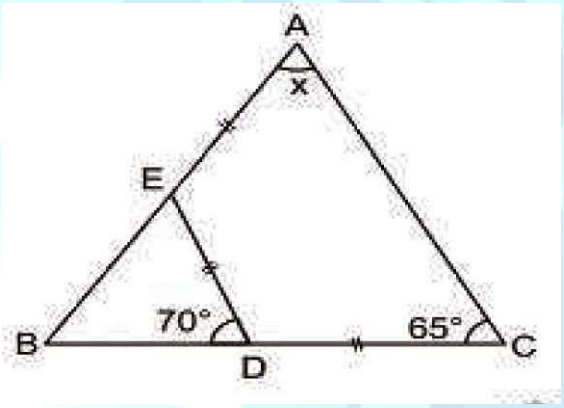
2-usul. DT to‘g‘ri chiziq BA to‘g‘ri chiziqni x burchak ostida kesib o‘tadi;

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DT to‘g‘ri chiziq BE to‘g‘ri chiziq bilan 90^0 burchak ostida kesishgan; <EBA=50^0 ekanligidan x=40^0 ga teng bo‘ladi.
<ABK=90^0 bo‘lsa u holda <KBE=40^0;

BK va DT to‘g‘ri chiziqlar hosil qilgan vertikal burchaklar 50^0 ga teng; Uchburchakning ichki burchaklari yig‘indisi 180^0 ga tengligidan <FDT=40^0 ekanligi kelib chiqadi.

2-masala. Quyida berilganlarga ko‘ra $m\left(\measuredangle BAC\right)=?$ ni toping.[2]

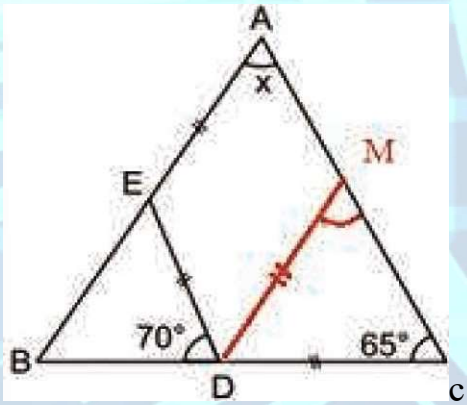


ABC-uchburchak

$|AE|=|ED|=|DC|$

$m\left(\measuredangle BDE\right)=70^0$

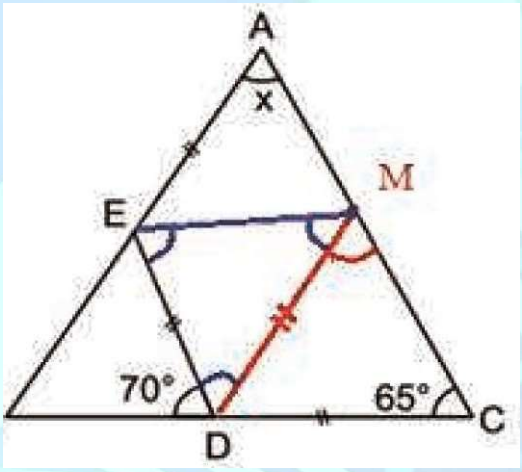
$m\left(\measuredangle ICB\right)=65^0$



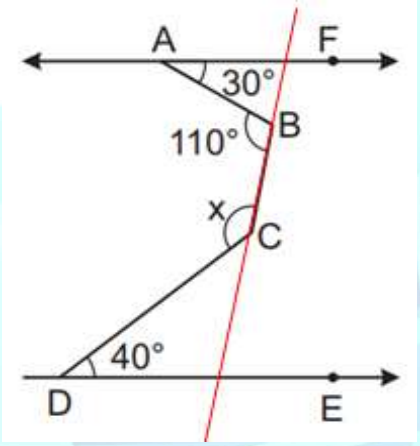
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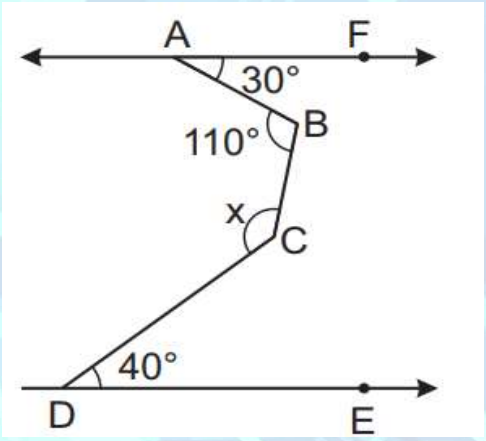
Ushbu masala o‘quvchilarni izlanishga majbur qiladi, chunki berilganlar masalani yechish uchun berilganlar yetarli emas. U holda qanday yo‘l tutish mumkin. I)D nuqtadan AC tomonga DC uzunlikda to‘g‘ri chiziq o‘tkazamiz va teng yonli uchburchak hosil qilamiz. Rasmda ko‘rinib turganidek $m\left(\measuredangle DMC\right)=m\left(\measuredangle DCM\right)=65^0$ bo‘ladi, bundan $m\left(\measuredangle DMA\right)=115^0$ ga teng.

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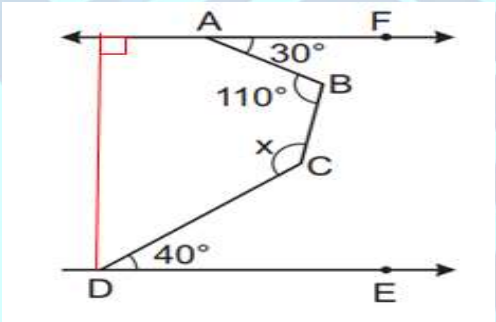
2) ΔDMC uchburchakning burchaklari 65^0 65^0 va 50^0 ekanligi ma'lum. Bundan $m\left(\measuredangle DM\right)=60^0$ ga teng bo‘ladi, ΔEMD uchburchak teng yonli ekanligi aniqlanadi. Chunki teng yonli uchburchakning teng yonlari orasidagi burchagi 60^0 bo‘lsa, u holda bu uchburchak teng tomonlidir. 3) yuqoridagi aniqliklardan ΔAEM uchburchakning teng yonli ekanligini bilamiz $|EA|=|EM|$, unda $m\left(\measuredangle MA\right)=180^0-65^0-60^0=55^0$ teng ekanligi kelib chiqadi.





3-masala. Quyida berilganlarga ko‘ra <DCB ni toping. [3] $AF \parallel DE$

$$m(\widehat{FAB}) = 30°$$
$$m(\widehat{ACB}) = 110°$$
$$m(\widehat{CDE}) = 40°$$



3-masala o‘quvchini o‘ylashga majbur qiladi.

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1-usul. D nuqtadan AF to‘g‘ri chiziqqa perpendikulyar o‘tkazamiz. Natijada beshburchak hosil bo‘ladi. Qo‘shni burchaklar yig‘indisi 180^0 va beshburchakning ichki burshaklari yig‘indisi 540^0 ekanligidan x burchakdan tashqari qolgan to‘rtta burchaklarni aniqlab chiqamiz. Chizmadan ko‘rinib turibdiki burchaklarimiz: $90^0+150^0+110^0+x+50^0=540^0$ dan $x=180^0$

2-usul. BC kesmani har ikkita uchidan davom ettirsak AF va DE parallel to‘g‘ri chiziqlarni kesib o‘tadi. <ABC ga qo‘shni burchak 70^0 ga teng bo‘ladi;
U holda BC to‘g‘ri chiziq AF bilan kesishganda 80^0 va 100^0 li burchaklar hosil qiladi;

Ichki almashinuvchi burchaklar tengligiga ko‘ra BC to‘g‘ri chiziq DE to‘g‘ri chiziq bilan kesishganda hosil bo‘lgan burchaklar 100^0 va 80^0 li burchaklar hosil qiladi;

Uchburchak ichki burchaklari yig‘indisi 180^0 ga tengligidan x burchakka qo‘shni burchak 40^0 ligini bilamiz va bundan x ning o‘zi 140^0 ekanligi kelib chiqadi.

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