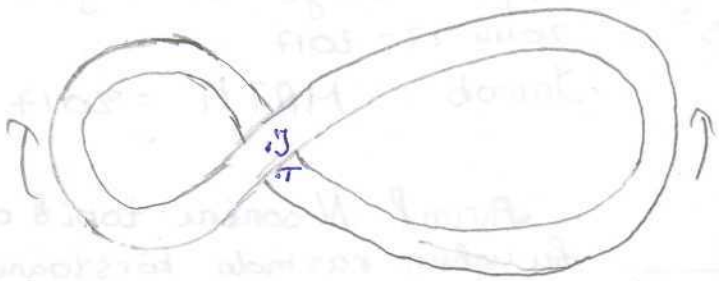
①



Jerry dan Tomgacha bo'lgan o'ng tomondagi masofa x;
Jami masofa $\to S$; Tomning tezligi $\to v_1$ Jerryniki esa v_2 bo'lsin.

$$\begin{cases} x = v_1 \cdot 20 \\ S - x = v_2 \cdot 70 \\ S - x = v_1 \cdot 15 \end{cases}$$ shartga ko'ra

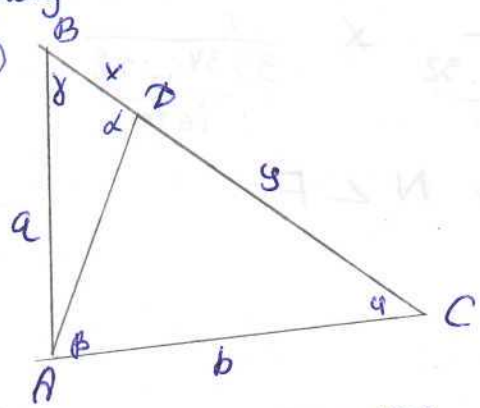
$20 \cdot v_2 = v_1 \cdot 15$ bir $\frac{x}{v_1 - v_2}$ ni topamiz.

$v_2 = \frac{3v_1}{4}$

$\frac{x}{v_1 - v_2} = \frac{v_1 \cdot 20}{\left(\frac{v_1}{4}\right)} = v_1 \cdot 20 \cdot \frac{4}{v_1} = 80$ minut Javob: 80 minut

② 2-bola 1-bola aytgan sonning teskarisini aytib boradi.
1-bolaning biror soni takrorlanmaguncha 2-nikki ham takrorlanmaydi. Natijada 1-bola faqat bir xil ~~son~~ raqam bilan boshlanuvchi sonni aytishga majbur bo'ladi. va u oxirgi shu raqam bilan boshlangan sonni aytganida 2-bola ham shu sonni teskarisini aytadi. boshqa shu son bilan boshlanuvchi son qolmagani uchun u biror sonni takrorlab, mag'lub bo'ladi. Javob: 2-bola yutadi.

③



1-bo'lib burchaklarni belgilaymiz.

$\angle ADC = 180^\circ - \beta - \varphi = 180^\circ - \alpha \Rightarrow \alpha = \beta + \varphi$

$x + b < x + y \Rightarrow b < y$

katta tomon qarshisida katta burchak.
kichik tomon qarshisida kichik burchak yotadi.

b ni qarshisida $\angle ADC$ ya'ni qarshisida $\angle DAC$ bor.

$\angle DAC > \angle ADC \Rightarrow \beta > 180^\circ - \beta - \varphi$

$\beta + \varphi + 180^\circ - \beta - \varphi = 180^\circ \to$ Δning ichki burchaklar yig'indisi 180°

$\beta > 180^\circ - \beta - \varphi$

$\underbrace{\beta + \varphi}_{\alpha} + \beta > 180^\circ$

$\alpha + \beta > 180^\circ \to \angle BDA + \angle DAC > 180^\circ$

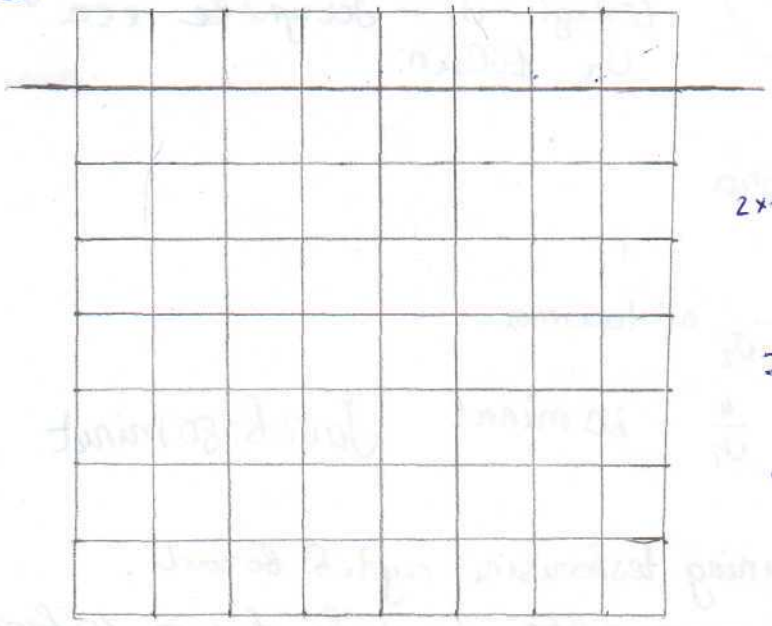
Isbotlandi

② Demak MASS Tushib qolmagani ya'ni to'g'risi bir xosi qiluvchi narsa ham kichik ham oxirgisi ~~oxirgisi~~ 2 ta raqami teng 2 va 5 da bu eng kichik hol lekin $10^3 + 2^3 + 5^3 + 1 = 1134$ $3 \neq 4$.
endi 3 va 4 ni boramiz aniqrog'i 3.4 ni $3^3 + (3 \cdot 4)^3 + 4^3 + 6^3 + 2^3 + 1 =$

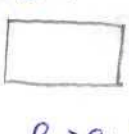
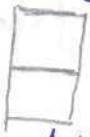
Endi MATH ni topsak M va A o'zgarmasligi va eng kichik son qolishi kerak $2014 - 3^3 = 2044 - 27 = 2017$

Javob: MATH = 2017

⑤



Avval N sonini topib olamiz buning uchun rasmda ko'rsatganimdek $\frac{1}{8}$ qismini ajratamiz bunda.

2×1  va  ning yarmi 1×1 ga bo'lib chiqamiz.

~~7 + 5 + 1 + 3 + 2 + 3 + 7~~

~~2 ta bop bo'ladi chunki~~ unda ~~tanlash imkoniyati~~

Biz ularni taqqoslaymiz 64 ta dan 32 tasini tanlash uchun $\frac{64!}{32! \cdot 32!}$ dan 64 tadan 16 tani tanlash uchun.

$\frac{64!}{16! \cdot 48!}$ dan foydalanamiz.

$$\frac{64!}{32! \cdot 32!} \times \frac{64!}{16! \cdot 48!} = \frac{1}{\underbrace{17 \cdot 18 \cdot \ldots \cdot 32}_{16\text{ ta}}} \times \frac{1}{\underbrace{33 \cdot 34 \cdot \ldots \cdot 48}_{16\text{ ta}}}$$

demak: $\frac{1}{17 \cdot 18 \cdot \ldots \cdot 32} < \frac{1}{33 \cdot 34 \cdot \ldots \cdot 48} \Rightarrow N < F$

Javob: F katta.