

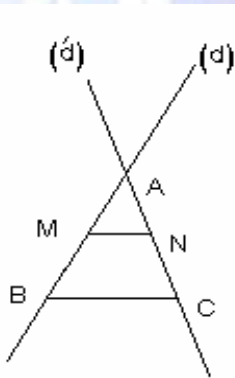
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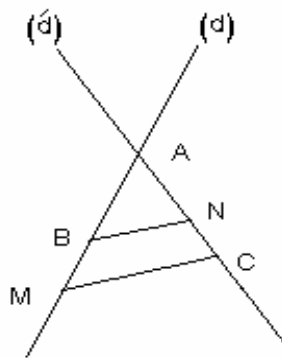


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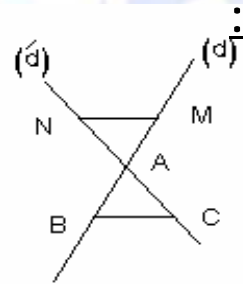
$(d')$   $(d)$   
 $A$   $(d)$   $M$   $B$   
 $A$   $(d')$   $N$   $C$   
 $(MN) \parallel (BC) :$   
 $\frac{AM}{AB} = \frac{AN}{AC} = \frac{MN}{BC} :$



الشكل 3



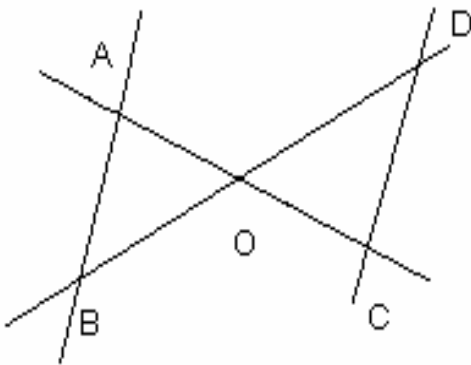
الشكل 2



الشكل 1

A	(d')	(d)
A	(d)	M B
A	(d')	N C
A,B,M	$\frac{AM}{AB} = \frac{AN}{AC}$	:
A,C,N		
	(MN) // (BC)	:

cm :



(CD) // (AB) :

OA=4; OD=8,4

OC=6; AB=3

OB : /

CD : /

O : (AC) (DB)

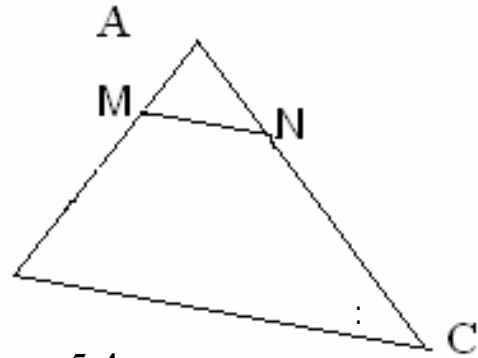
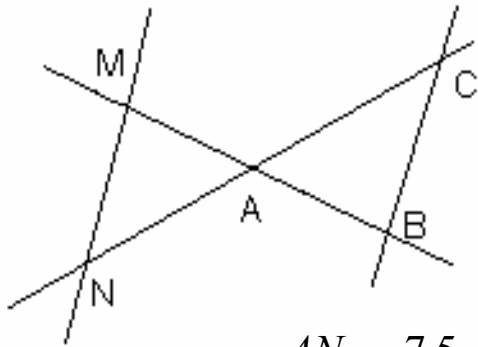
(CD) (AB) :

$$\frac{4}{6} = \frac{OB}{8,4} = \frac{3}{CD} \quad ; \quad \frac{OA}{OC} = \frac{OB}{OD} = \frac{AB}{CD}$$

OB = 5,6 cm	:	$\frac{4}{6} = \frac{OB}{8,4}$	:
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$$\boxed{CD = 4,5 \text{ cm}} : \frac{4}{6} = \frac{3}{CD} :$$

:-



$$\frac{AN}{AC} = \frac{7,5}{12,5} = 0,6$$

$$\frac{AM}{AB} = \frac{5,4}{9} = 0,6 :$$

(BC) (MN)

$$\frac{AM}{AB} = \frac{11,9}{35} = 0,34$$

$$\frac{AN}{AC} = \frac{18,2}{52} = 0,35 :$$

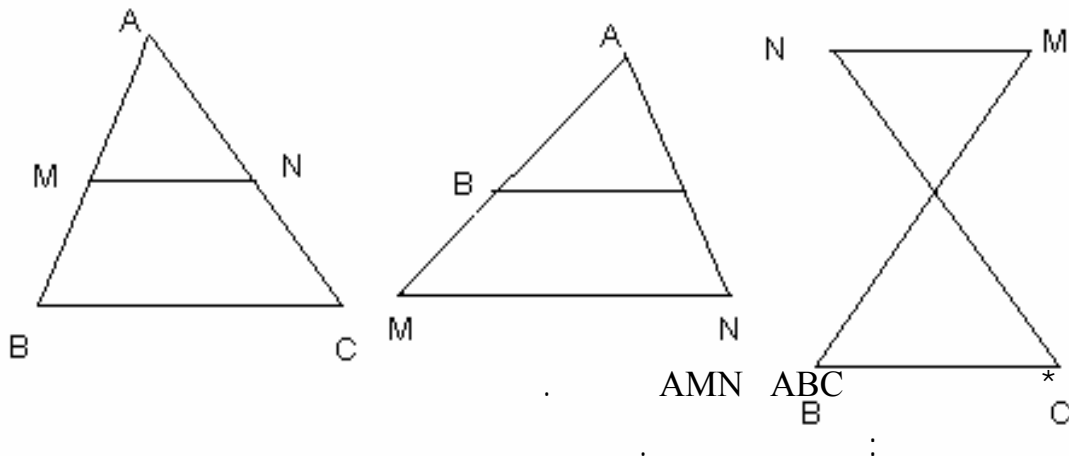
(BC) (MN) :

(AB) M ABC

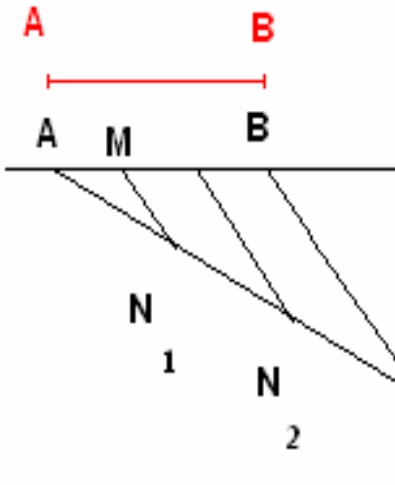
(AC) N

(MN) (BC) :

$$\frac{AM}{AB} = \frac{AN}{AC} = \frac{MN}{BC} :$$

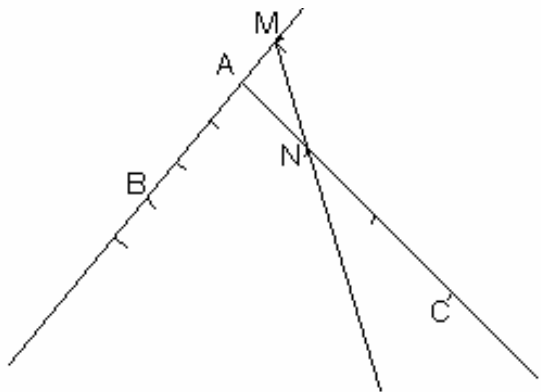
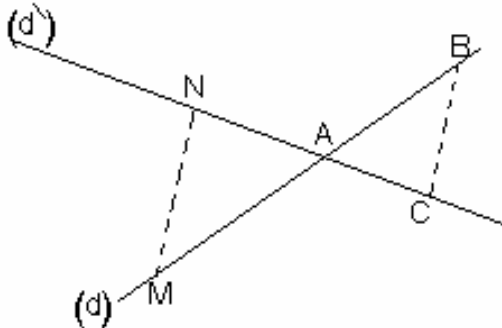
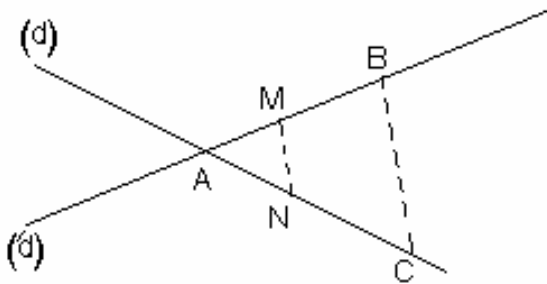


AM	AN	MN
AB	AC	BC



: [AB] :  
 [AX) \*  
 [ AX ) \*  
 A , N<sub>1</sub> , N<sub>3</sub> , N<sub>2</sub> :  
 B N<sub>3</sub> \*  
 [N<sub>3</sub>B] [AB] N<sub>1</sub> , N<sub>2</sub> M<sub>1</sub> , M<sub>2</sub> \*

$[AB] \quad M \quad ABC$   
 $\frac{AM}{AB} = \frac{AP}{AC} \quad [AC] \quad P$   
 $(MP) // (BC) :$



$$\frac{AM}{AB} = \frac{AN}{AC} = \frac{1}{3}$$

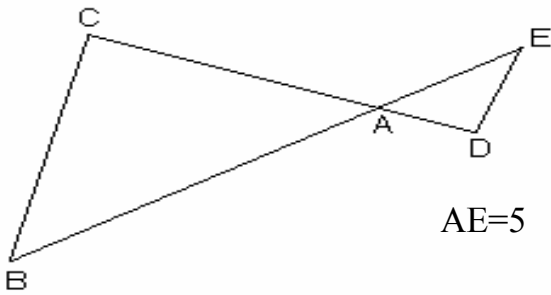
(BC) (MN)



(BC) // (ED) /1

AC=15 ; BC=18 ; AB=12 ; AE= 7

AD; DE;: \*



AE=5 [AD]

: ABCD /2

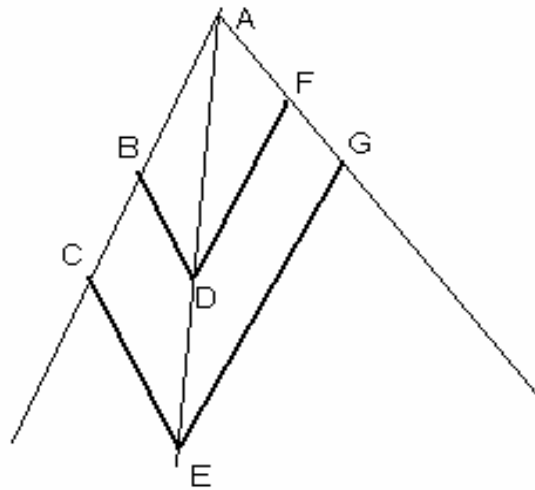
E . BC = 7 ; AB=12

F (CD) (BE)

FD EF / EB \*

[AE] D [AC] B ACE /3

(CE) (BD) AD=AB

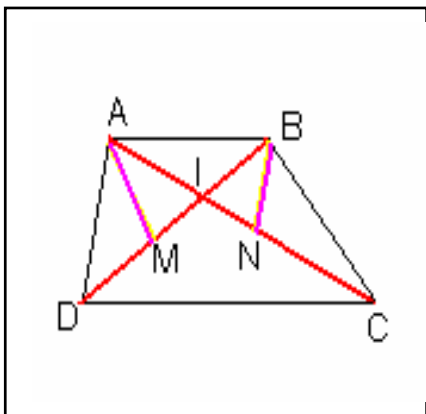
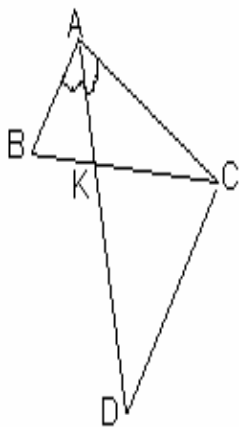
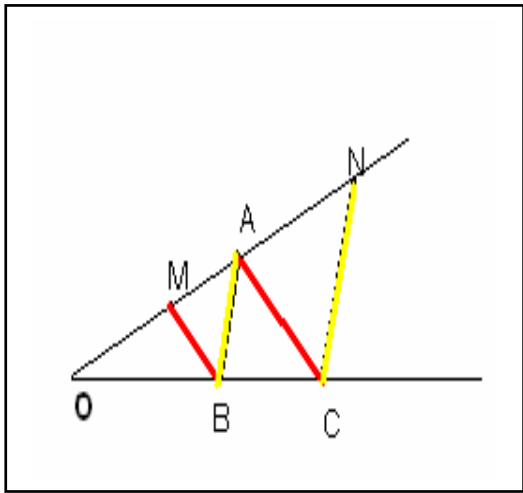


/4

(EG)//(DF) (CE)// (BD)

(GC)//(BF) /





: /5  
(AC) (BM)

(NC) (AB)

$$OA^2 = OM \times ON \quad *$$

ABC /6

K [BC] BAC

C (AB)

D (AK)

C

DAC

\*

$$\frac{AB}{AC} = \frac{KB}{KC} \quad *$$

[CD] [AB]

ABCD /7

[AC] K [BC]

J [AD]

I

(AB)

I;J;K :

\*

.CD

AB

IJ

\*

[CD] [AB]

ABCD/8

(BC)//(AM) [BD]

M\*

(AD)//(BN) [AC]

N \*

[BM] [AN]

I \*

(AB)// (MN)

\*

/9

( ) S T

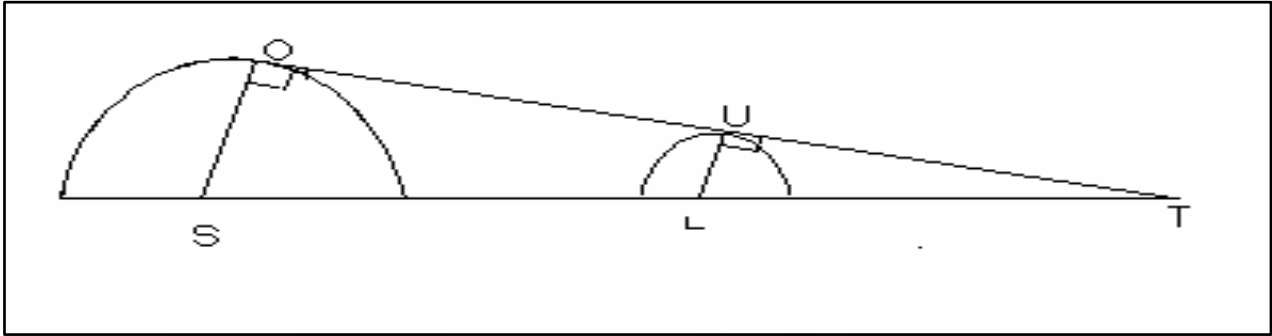
T, L, S: ( ) L

695 000 km [ OS]

1 736 km [ LU]

150 ST

LT: \*



O (AC) (BD) / 10

OD=7; OB=5; OA = 6.5 ; OC=9.1 :

ABCD \*

DE AD : /1

(AC) D (AB) E } :  
 (ED) // (BC)  

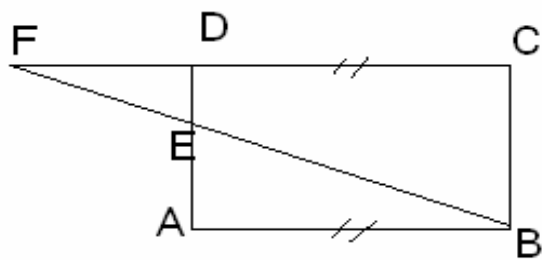
$$\frac{AC}{AD} = \frac{AB}{AE} = \frac{BC}{ED}$$

$$\frac{15}{AD} = \frac{12}{7} \quad \frac{AC}{AD} = \frac{AB}{AE}$$

$$AD=8,75$$

$$\frac{BC}{ED} = \frac{AB}{AE} \quad \frac{18}{DE} = \frac{12}{7}$$

$$DE=10,5 :$$



$$EB: \quad /2$$

$$A: \quad ABE \quad [EB]$$

:

$$EB^2 = AB^2 + AE^2$$

$$EB^2 = 12^2 + 5^2$$

$$EB^2 = 169$$

$$EB^2 = \frac{EF \cdot ED}{\sqrt{169}} \quad /3$$

$$(FB) \quad E \quad (FC) \quad D :$$

$$(BC) \parallel (ED) \quad EB = 13$$

: FBC

$$(1) \dots \frac{FE}{FB} = \frac{FD}{FC} = \frac{ED}{BC}$$

$$ED = 2 ; ED = AD - AE$$

$$\frac{ED}{BC} = \frac{2}{7}$$

$$FB = x + 13 ; FB = FE + EB \quad FE = x$$

$$(1) \quad \frac{FE}{FB} = \frac{x}{x+13} :$$

$$7x = 2x + 26 : \quad \frac{x}{x+13} = \frac{2}{7}$$

$$x = \frac{26}{5} \quad 5x = 26$$

$$EF = \frac{26}{5} :$$

$$FD = \frac{24}{5} :$$

:

/4

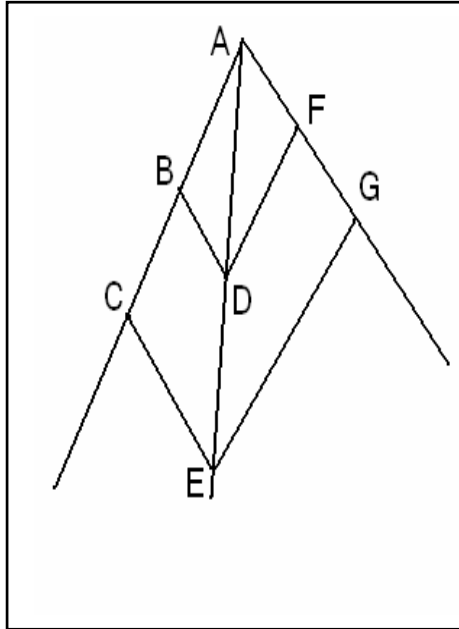
:

(CE) (BD)

$$AD = AB : \quad \frac{AD}{AE} = \frac{AB}{AC}$$

$$AC = AE :$$

. ACE



(CG) // (BF) : 15

$$\frac{AC}{AB} = \frac{AG}{AF} :$$

ABF

ABD : (1)

(AB) E

(AD) E

(CE) // (BD)

$$(1) \dots \frac{AC}{AB} = \frac{AE}{AD} :$$

ADF

(2)

(AF) G

(DF) // (EG) (AD) E

$$(2) \dots \frac{AE}{AD} = \frac{AG}{AF} :$$

$$\frac{AC}{AB} = \frac{AG}{AF} : (2) (1)$$

ABF

$$\frac{AC}{AB} = \frac{AG}{AF} (AF) G (AB) C :$$

(BF) // (CG) :

$$OA^2 = OM \times ON : 16$$

(AB) C (OM) A:

(AC) // (MB)

$$(1) \dots \frac{OM}{OA} = \frac{OB}{OC} :$$

(OC)

B (ON)

(AB) // (CN)

$$(2) \dots \frac{OA}{ON} = \frac{OB}{OC} :$$

$$\frac{OM}{OA} = \frac{OA}{ON} : \quad (2) \quad 1(1)$$

$$OA^2 = OM \times ON :$$

$$\overset{C}{\angle ADC} = \overset{ACD}{\angle DAC} : \quad /7$$

$$\overset{BAC}{\angle BAC} \quad [AK] : \quad \cdot \overset{BAD}{\angle BAD} = \overset{DAC}{\angle DAC} :$$

$$\overset{BAD}{\angle BAD} \quad \overset{ADC}{\angle ADC} \quad (DC) \quad (AB)$$

$$\overset{DAC}{\angle DAC} = \overset{ADC}{\angle ADC} : \quad ( \quad ($$

$$C: \quad \overset{ACD}{\angle ACD} : \quad \cdot$$

$$K. \quad \frac{AB}{AC} = \frac{KB}{KC} : \quad *$$

$$(BC) \quad (AD) : \quad \cdot$$

$$(CD) \quad (AB)$$

$$(1) \dots \frac{AB}{CD} = \frac{KB}{KC} :$$

$$C \quad DAC : \quad \cdot$$

$$\frac{KB}{KC} = \frac{AB}{AC} : \quad (1) \quad CD = AC:$$

$$\cdot (AB) \quad J, I, K : \quad /8$$

$$(IK) \quad \overset{ACD}{\angle ACD} \quad *$$

$$[AC] \quad [AD] \quad K \quad I$$

$$(DC)$$

$$(KJ) \quad \overset{ACB}{\angle ACB} \quad *$$

$$[BC] \quad [AC] \quad J \quad K$$

$$(AB)$$

$$[DC] \quad [AB] \quad \overset{ABCD}{\angle ABCD} \quad *$$

$$(KJ) // (AB) \quad (DC) // (IK) \quad (DC) // (AB) :$$

(KJ) (KI) K (KG)// (KI) :  
 (AB) I,J,K :

CD AB IJ

(1)...IJ = IK + KJ : (IJ) K :

[CB] [AD] K I

(2)... IK =  $\frac{1}{2}$  DC :

[CB] [CA] J K :

(3)... KJ =  $\frac{1}{2}$  AB :

$IJ = \frac{1}{2} DC + \frac{1}{2} AB$  : (3) (2) (1)

$IJ = \frac{1}{2} (AB + DC)$  :

(AB)//(MN) : /9

(AI) N (ID) B  
 ( ) (AD)//(BN)

(1)...  $\frac{IN}{IA} = \frac{IB}{ID}$  :

AMI ::

(BI) B (IA) C

( ) (AM)//(BC)

(2)...  $\frac{IM}{IB} = \frac{IA}{IC}$  :

ABI ::

(BI) D (IA) C  
 ( ) (AB)//(DC)

(3)...  $\frac{IB}{ID} = \frac{IA}{IC}$  :

(4)...  $\frac{IN}{IA} = \frac{IM}{IB}$  : (3) (2) (1) :

ABI :

(AI) N (BI) M

$$\frac{IN}{IA} = \frac{IM}{IB}$$

(AB)//(MN) :

: /10

TSO

(ST) L (TO)

( ) (SO)//(LU)

$$\frac{TL}{TS} = \frac{UL}{OS}$$

$$\frac{TL}{150 \times 10^6} = \frac{1736}{695 \times 10^3}$$

$$TL = \frac{150 \times 10^6 \times 1736}{695 \times 10^3}$$

. TL = 374676 ,26 km :

ABCD /11

[CD] [AB]

$$\frac{OB}{OD} = \frac{5}{7} = 0,71 :$$

$$\frac{OA}{OC} = \frac{6,5}{9,1} = 0,71 :$$

AOB :

(OB) D (OA) C

$$\frac{OA}{OC} = \frac{OB}{OD} = 0,71$$

OBA :

(DC)// (AB)

[DC] [AB] ABCD :