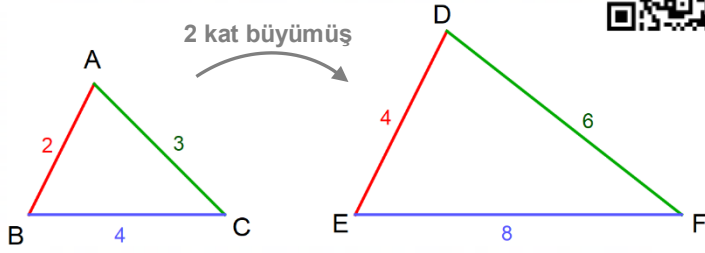


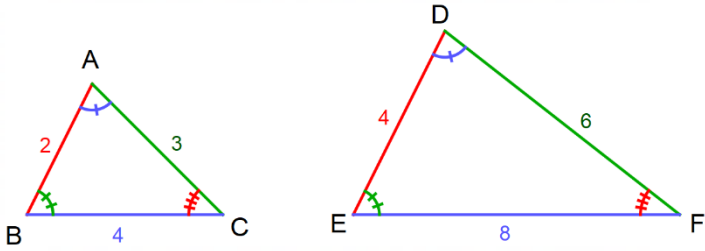
1- Benzerlik Nedir?



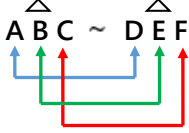
ABC üçgeni ile DEF üçgeni benzerdir.

$\triangle ABC \sim \triangle DEF$ şeklinde gösterilir.

* Benzer üçgenlerde oranlı kenarlara bakan açılar eşittir.



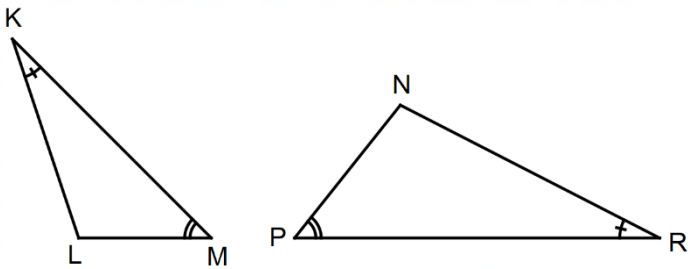
$$\frac{|BC|}{|EF|} = \frac{|AC|}{|DF|} = \frac{|AB|}{|DE|}$$



$$m(\hat{A}) = m(\hat{D}) \quad m(\hat{B}) = m(\hat{E}) \quad m(\hat{C}) = m(\hat{F})$$

* Bu durumda karşılıklı üçer açısı eşit olan üçgenler benzer üçgenlerdir ve eşit olan açılarda karşısındaki kenarları arasında sabit bir oran vardır.

Örneğin ;

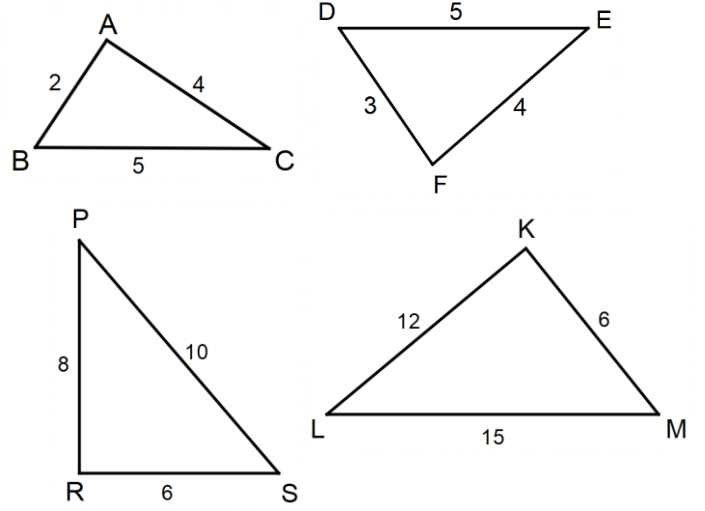


$$m(\hat{K}) = m(\hat{P}) \quad \text{ve} \quad m(\hat{M}) = m(\hat{R}) \quad \text{ise} \quad m(\hat{L}) = m(\hat{N})$$

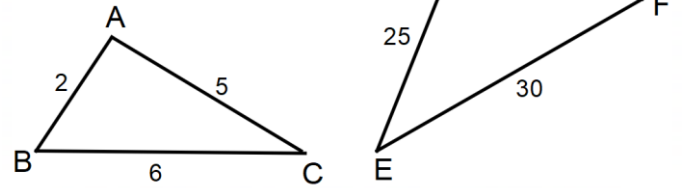
$$\frac{|LM|}{|NP|} = \frac{|KL|}{|NR|} = \frac{|KM|}{|PR|}$$

Sorular :

1. Aşağıdaki üçgenlerden benzer olanları bulun.

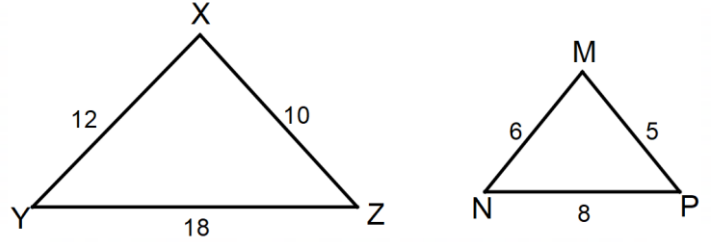


2. Aşağıdaki üçgen çiftlerinin altında verilen açı eşitliklerinden hangileri doğrudur?



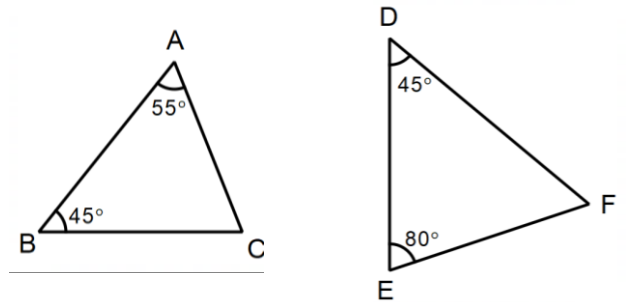
I) $m(\hat{A}) = m(\hat{D})$

II) $m(\hat{B}) = m(\hat{E})$



III) $m(\hat{Y}) = m(\hat{N})$

3. Aşağıdaki benzerlik orantısında soru işaretlerinin yerine hangi kenar uzunlukları yazılmalıdır?

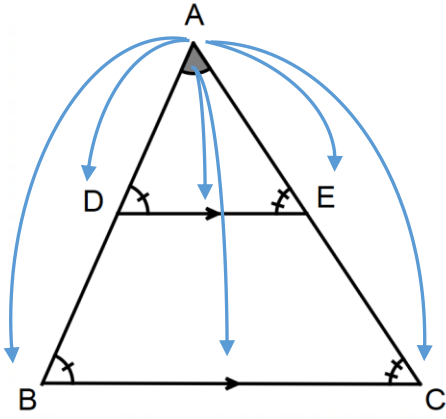


$$\frac{|AB|}{?} = \frac{|BC|}{?} = \frac{|CA|}{?}$$

Daha fazla test ve konu anlatımı için matematikchi.net

1) $\triangle ABC \sim \triangle KML$ $\triangle FDE \sim \triangle RSP$ 2) I 3) $\frac{|AB|}{|DF|} = \frac{|BC|}{|DE|} = \frac{|CA|}{|EF|}$

2 – Thales Benzerliği (Paraleller ve Benzerlik)

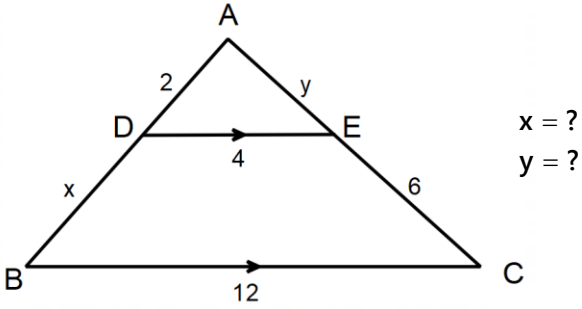


$$\triangle ABC \sim \triangle ADE$$

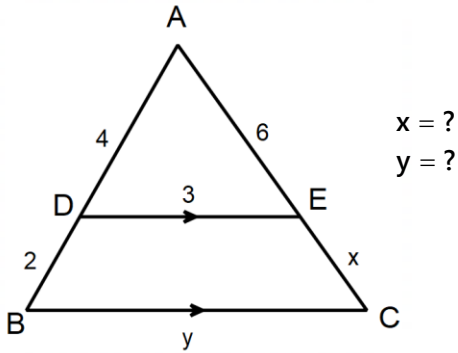
Benzerlik orantısı : $\frac{|DE|}{|BC|} = \frac{|AD|}{|AB|} = \frac{|AE|}{|AC|}$

Sorular :

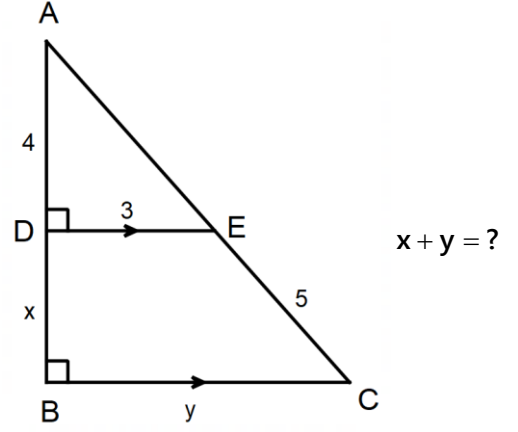
1.



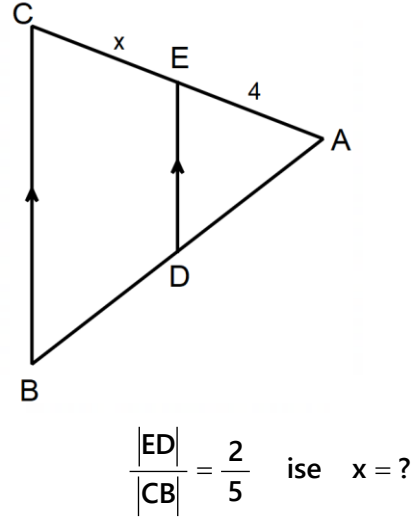
2.



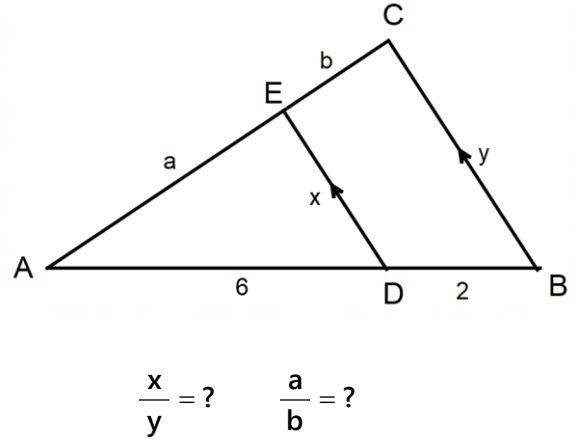
3.



4.



5.



Daha fazla test ve konu anlatımı için matematikchi.net

1) $x = 4$ $y = 3$

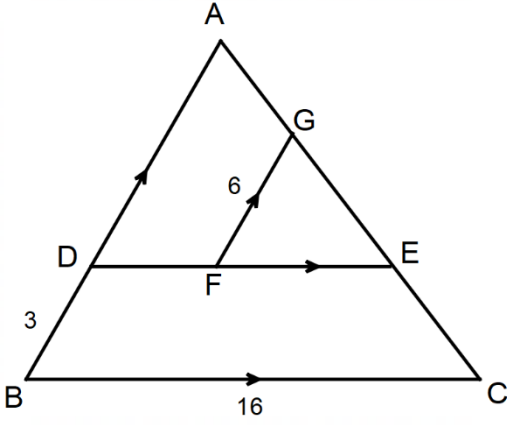
2) $x = 3$ $y = \frac{9}{2}$

3) 10

4) 6

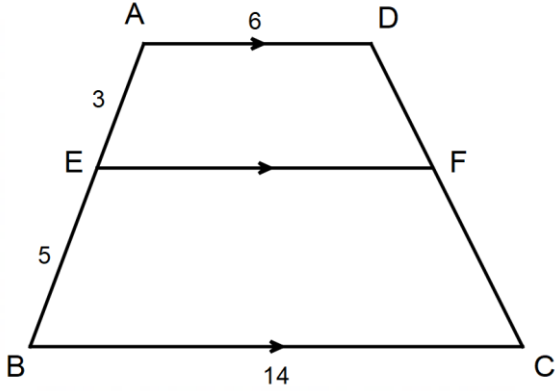
5) $\frac{x}{y} = \frac{3}{4}$ $\frac{a}{b} = 3$

6.



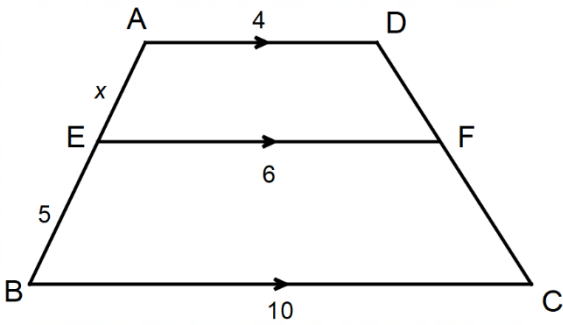
$|GE| = 2 \cdot |AG|$ ise $|DE|$ kaç birimdir?

7.



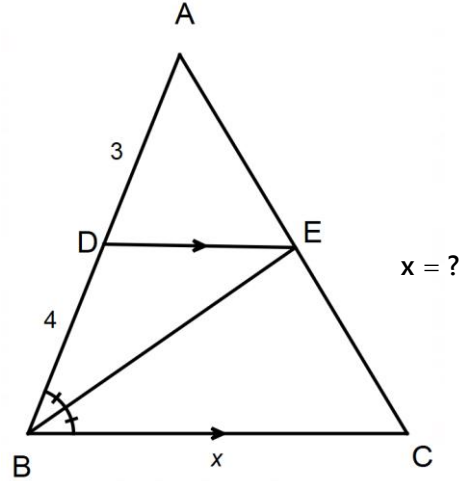
$|EF| = ?$

8.



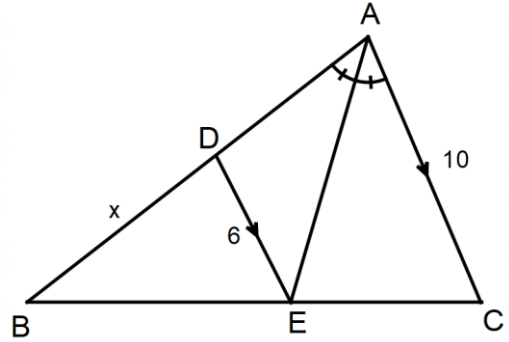
$x = ?$

9.



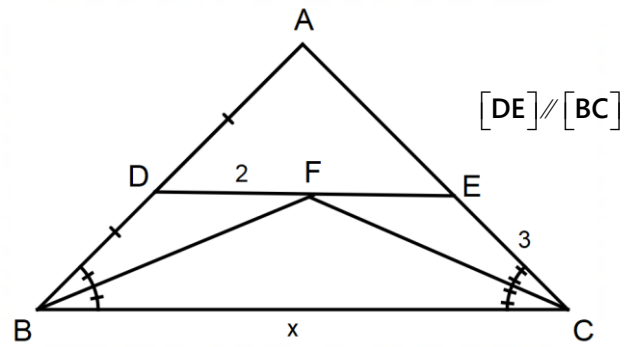
$x = ?$

10.



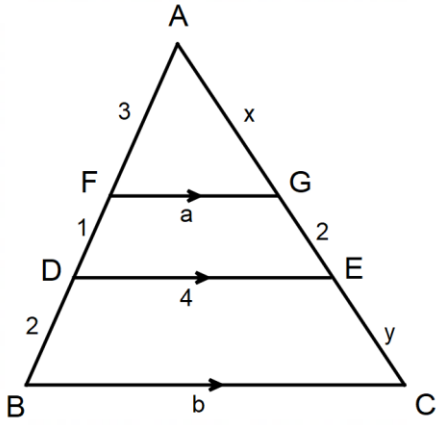
$x = ?$

11.



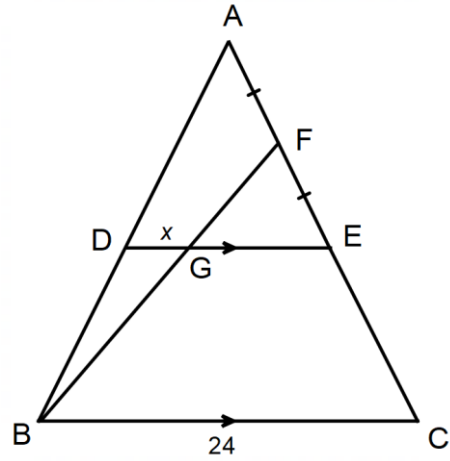
$x = ?$

12.



$$\frac{x+y}{a+b} = ?$$

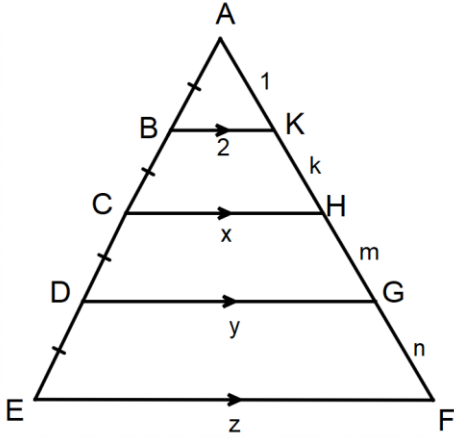
15.



$$|AE| = |EC|$$

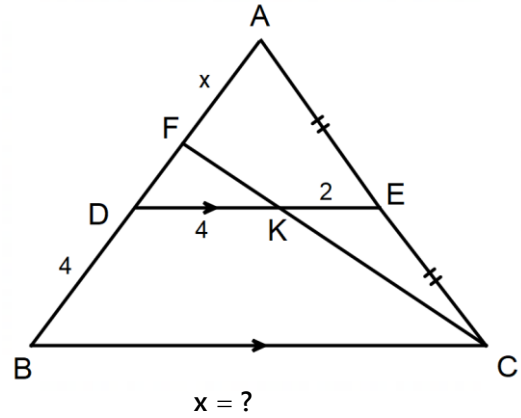
$$x = ?$$

13.



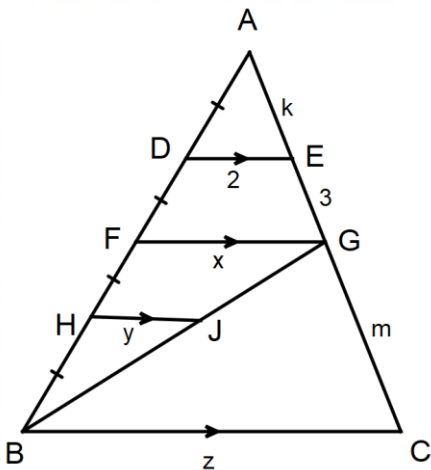
$$\frac{x+y+z}{k+m+n} = ?$$

16.



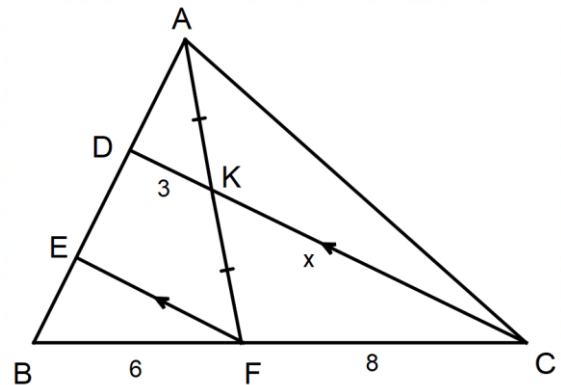
$$x = ?$$

14.



$$\frac{x+y+z}{k+m} = ?$$

17.



$$x = ?$$

Daha fazla test ve konu anlatımı için matematikchi.net

12) $\frac{10}{9}$

13) 6

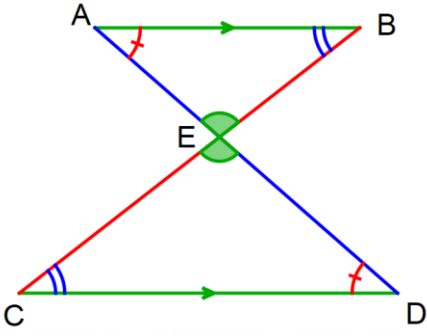
14) $\frac{14}{9}$

15) 4

16) 2

17) 11

3 – Papyon Benzerliği :



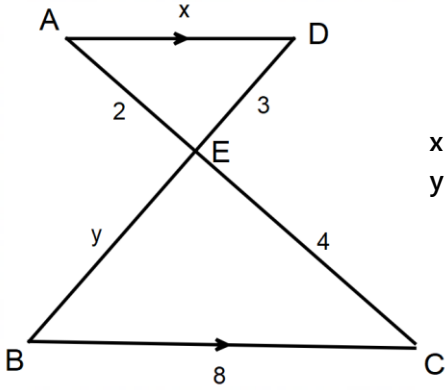
EAB üçgeni ile EDC üçgeni benzerdir.

$$\triangle EAB \sim \triangle EDC$$

$$\frac{|AB|}{|CD|} = \frac{|EB|}{|EC|} = \frac{|EA|}{|ED|}$$

Sorular :

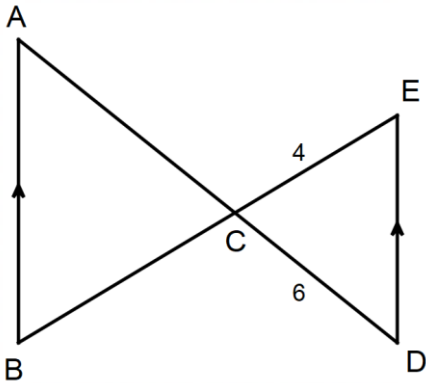
1.



$$x = ?$$

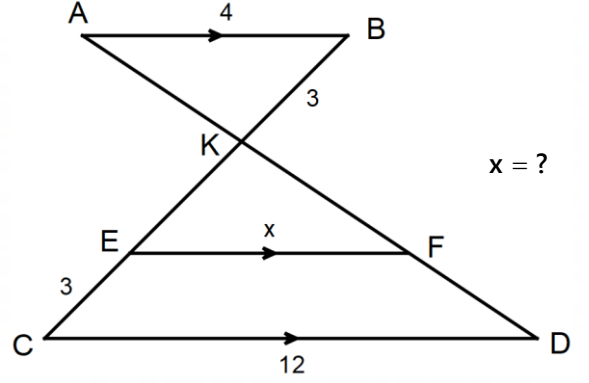
$$y = ?$$

2.



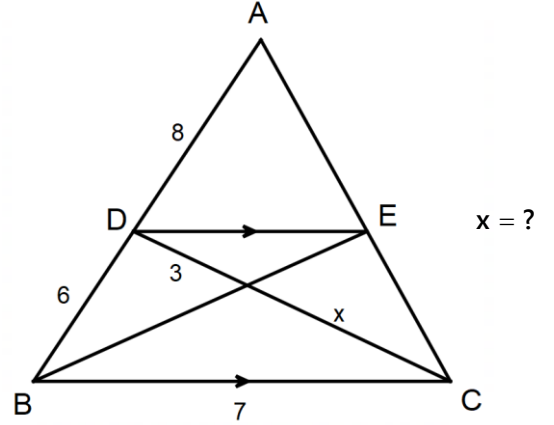
$$\frac{|AB|}{|ED|} = \frac{3}{2} \text{ ise } |AC| + |BC| \text{ kaç birimdir?}$$

3.



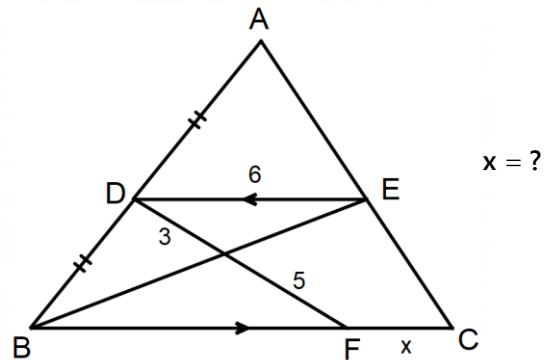
$$x = ?$$

4.



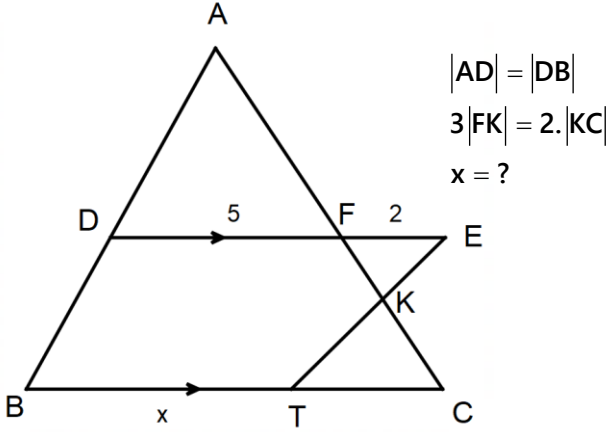
$$x = ?$$

5.

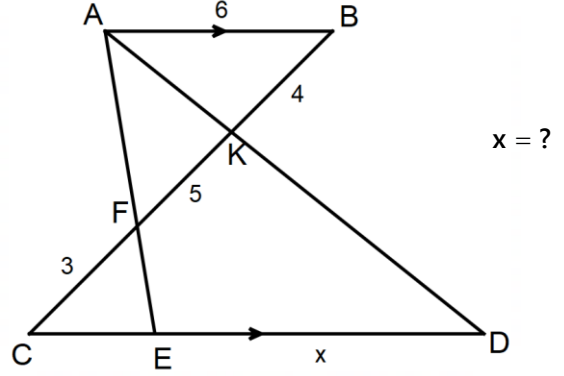


$$x = ?$$

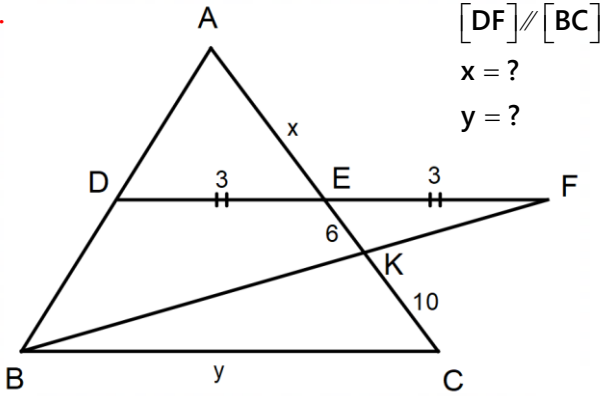
6.



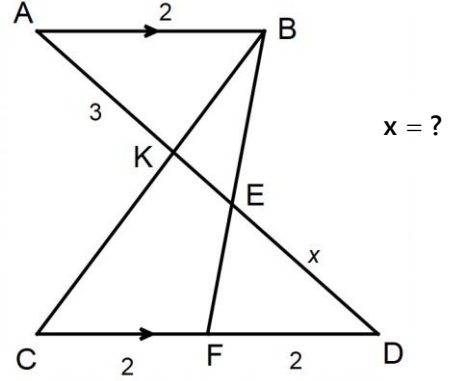
9.



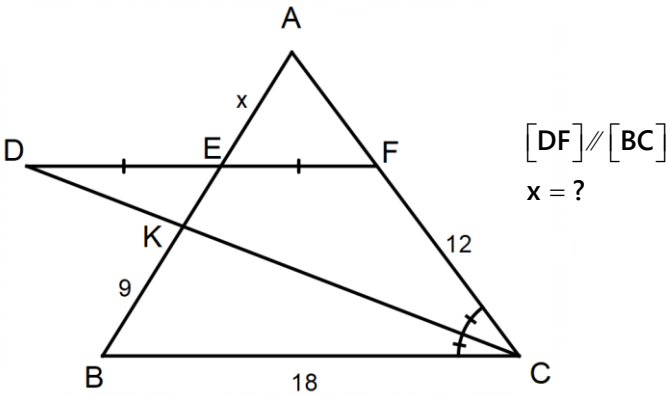
7.



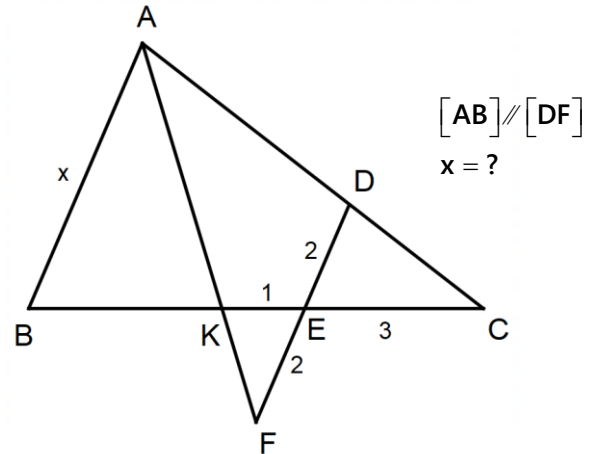
10.



8.



11.

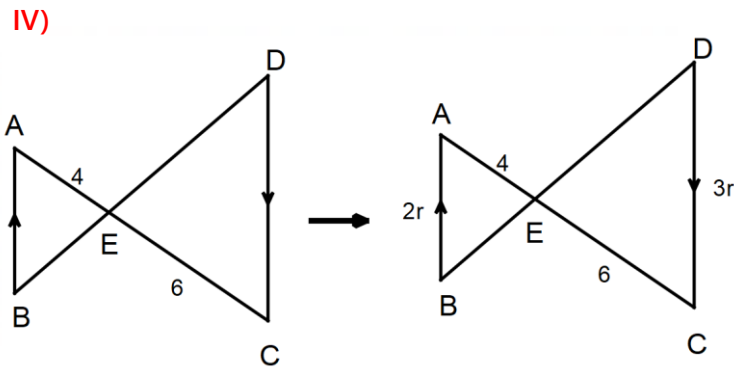
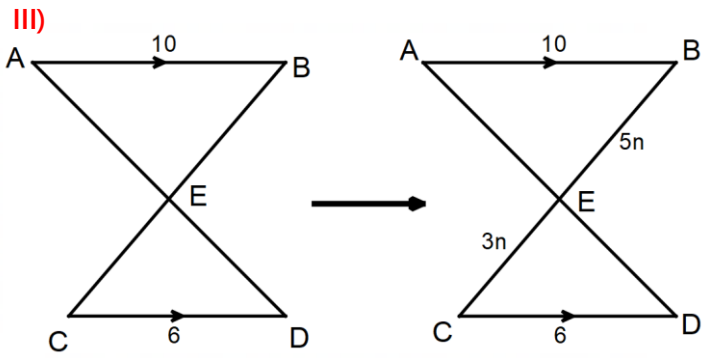
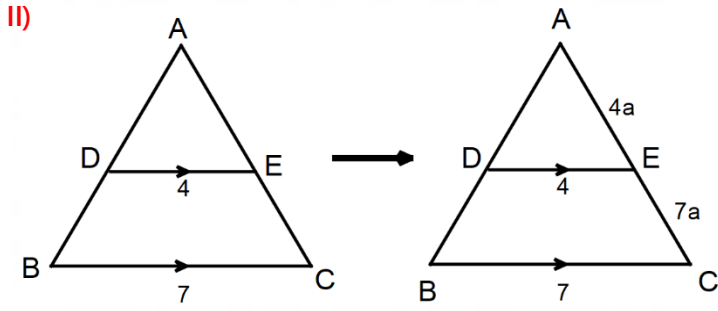
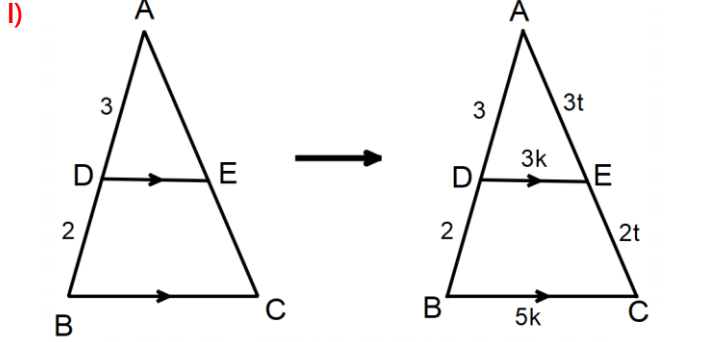


4 – Benzerlik Oranı Yazarak Çözülen Sorular :

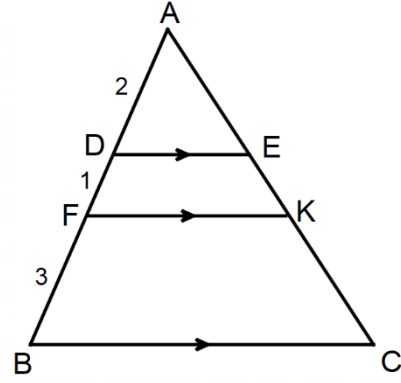


Sorular :

1. Aşağıdaki şıkların hangilerinde benzerlik oranları doğru yazılmıştır?

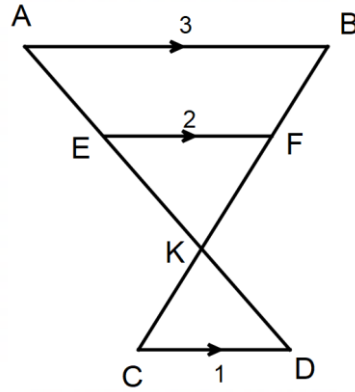


2.



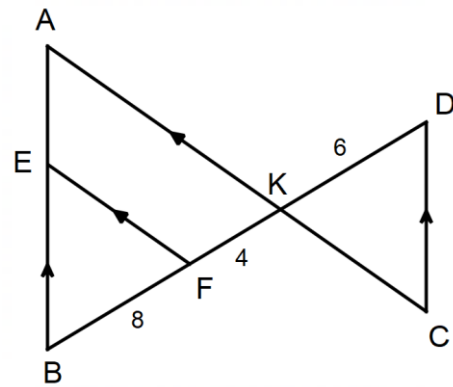
$$\frac{|DE| + |BC|}{|FK|} = ?$$

3.



$$\frac{|AE|}{|KD|} = ?$$

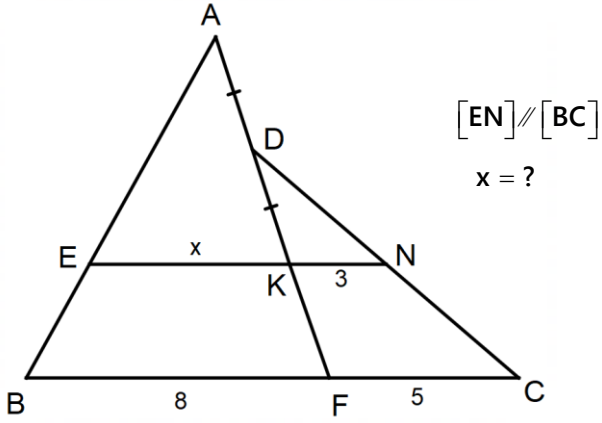
4.



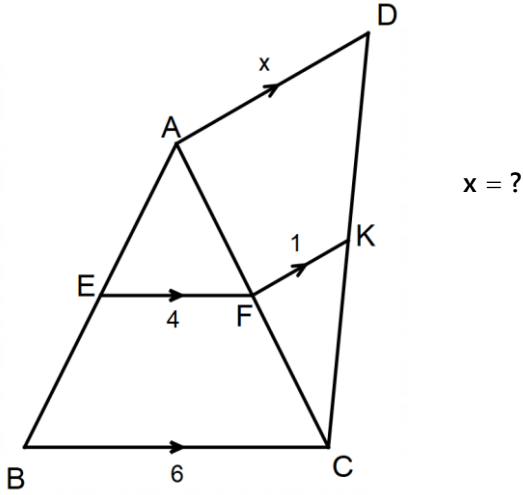
$$[AB] \parallel [DC], [EF] \parallel [AK]$$

$$\frac{|EF|}{|AC|} = ?$$

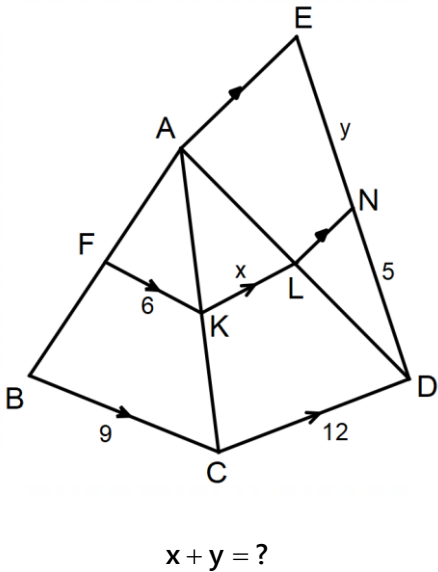
5.



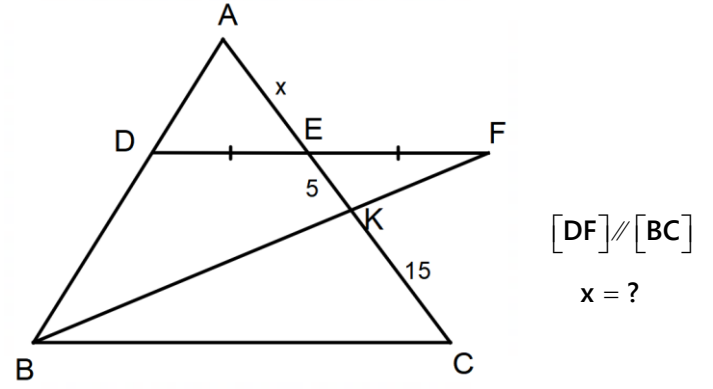
6.



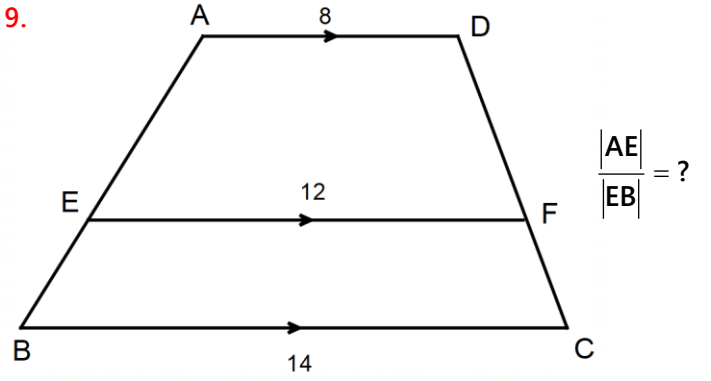
7.



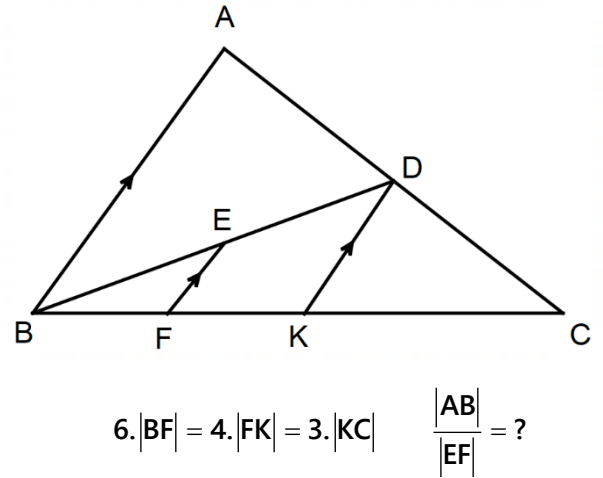
8.



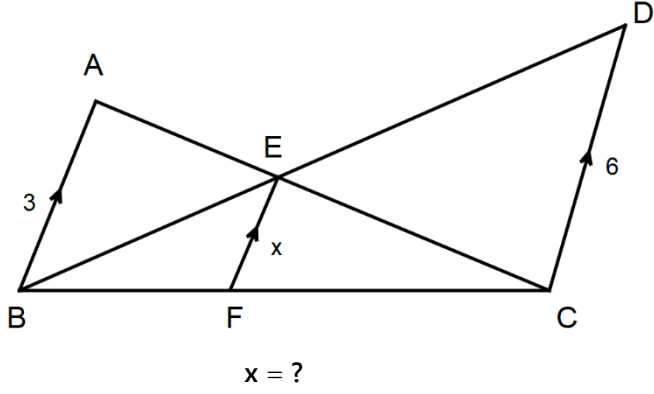
9.



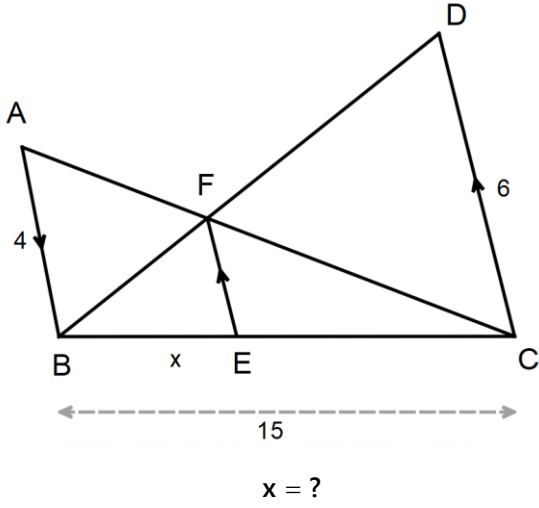
10.



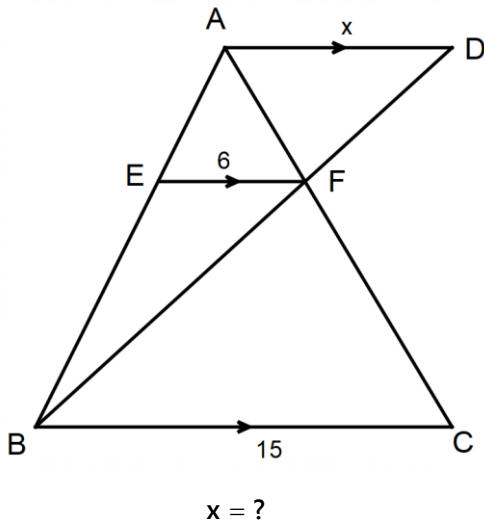
11.



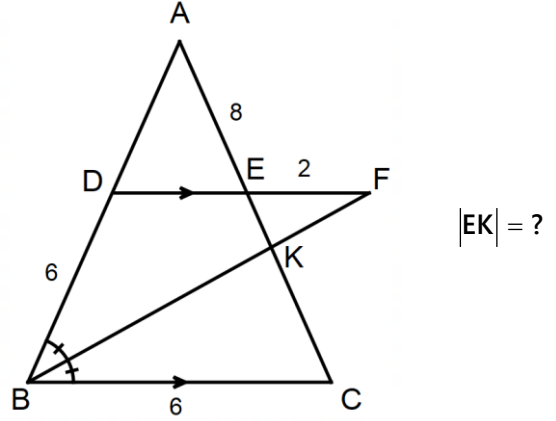
12.



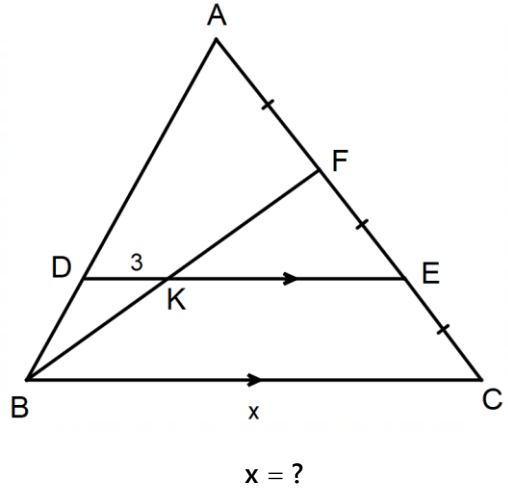
13.



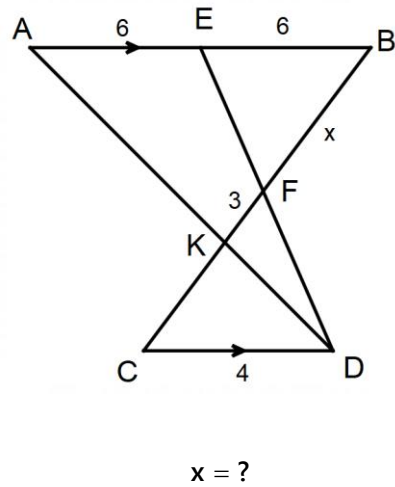
14.



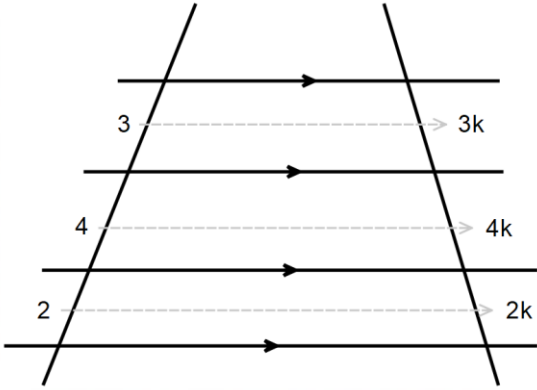
15.



16.

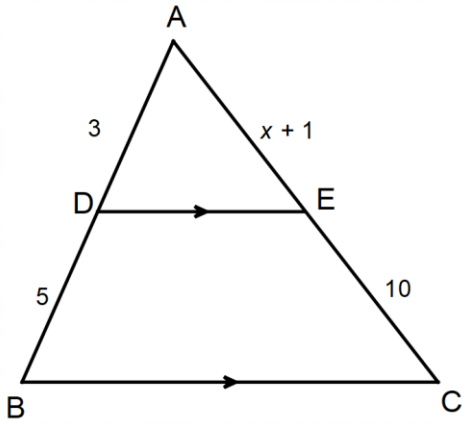


5 – Oranları Karşı Kenara Yansıtma :



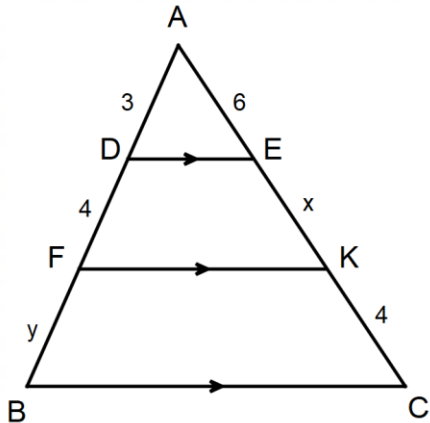
Sorular :

1.



$$x = ?$$

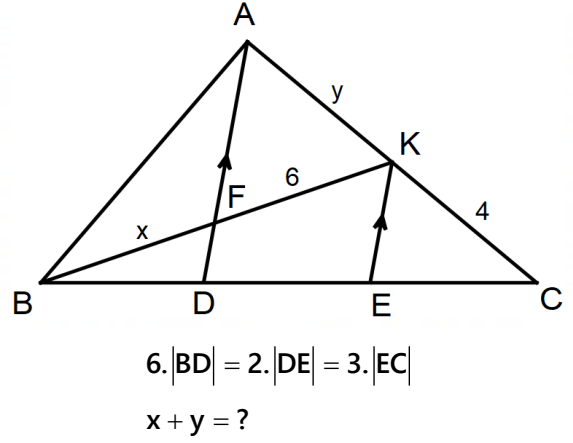
2.



$$x = ?$$

$$y = ?$$

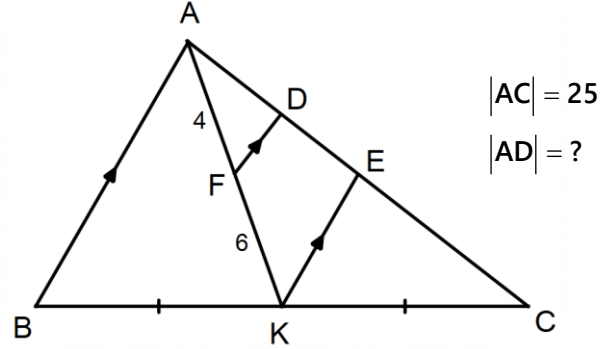
3.



$$6 \cdot |BD| = 2 \cdot |DE| = 3 \cdot |EC|$$

$$x + y = ?$$

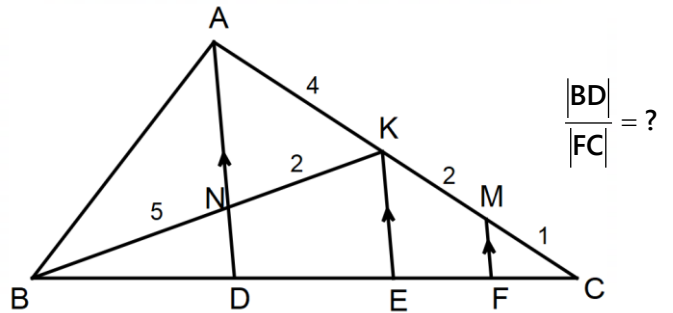
4.



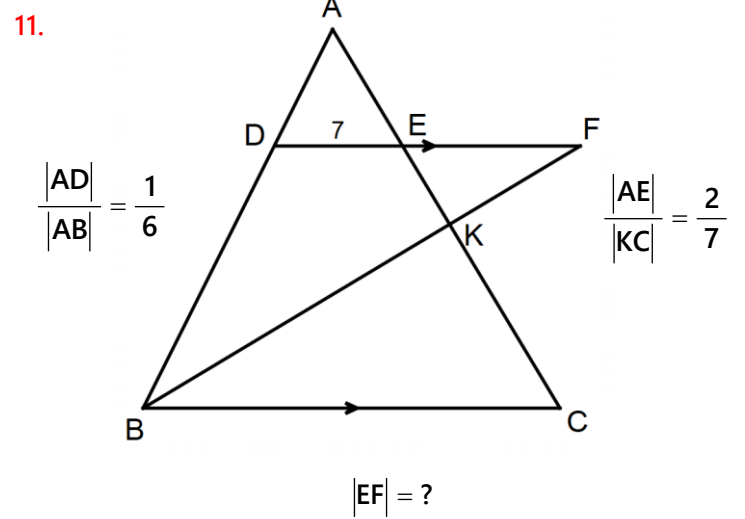
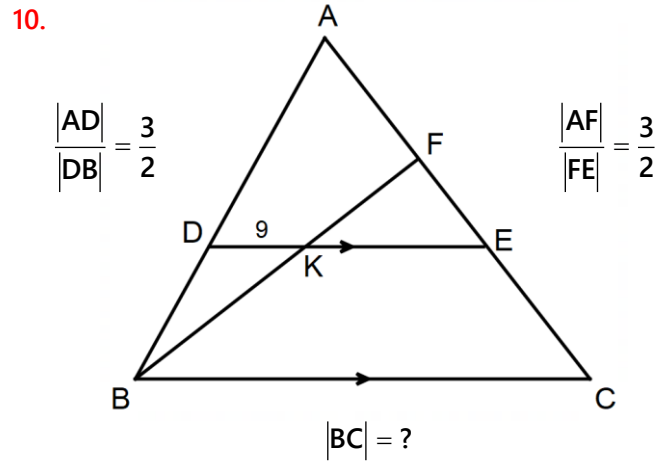
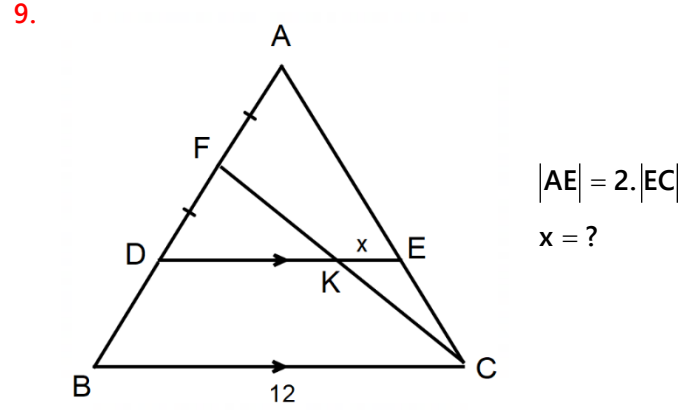
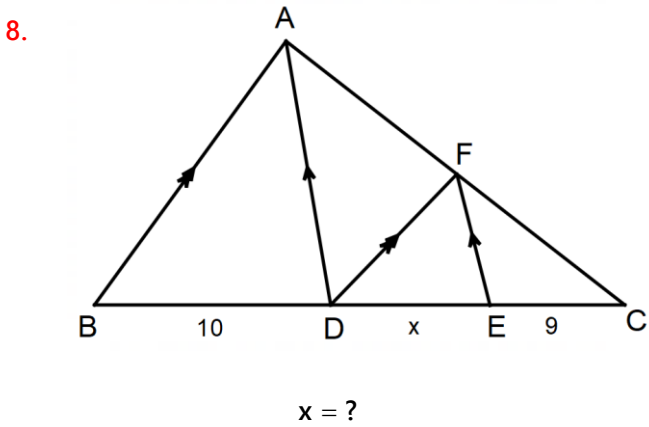
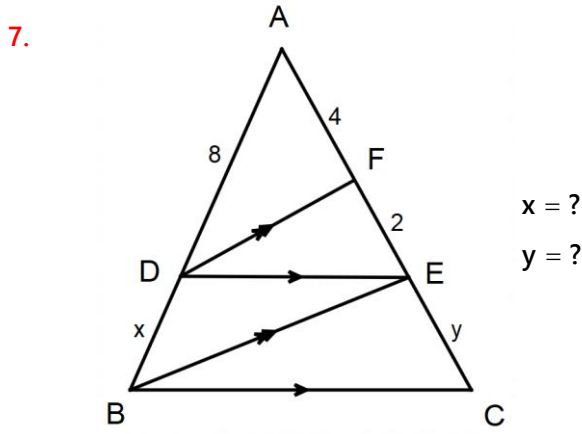
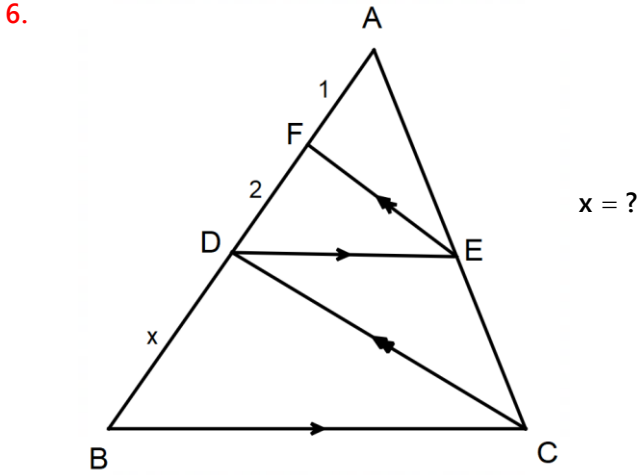
$$|AC| = 25$$

$$|AD| = ?$$

5.



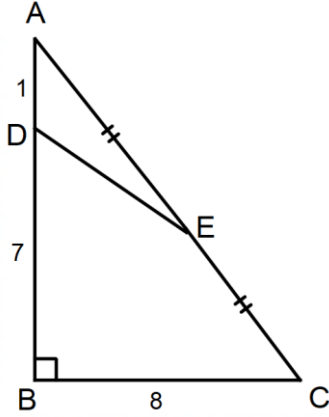
$$\frac{|BD|}{|FC|} = ?$$



6 – Paralel Çekilerek Çözülen Sorular :

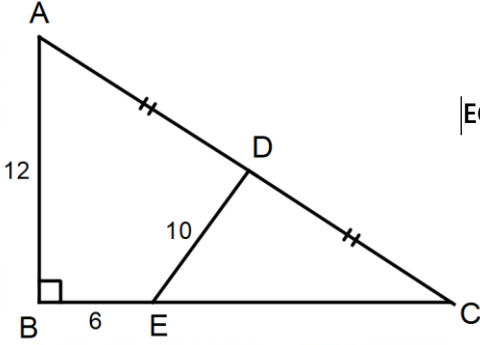
Sorular :

1.



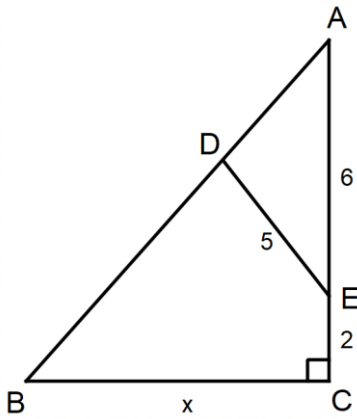
$$|DE| = ?$$

2.



$$|EC| = ?$$

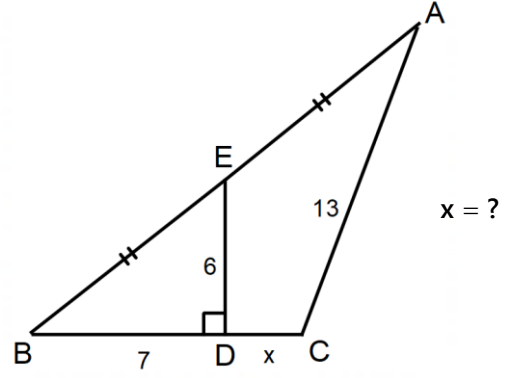
3.



$$\frac{|AD|}{|BD|} = \frac{1}{3}$$

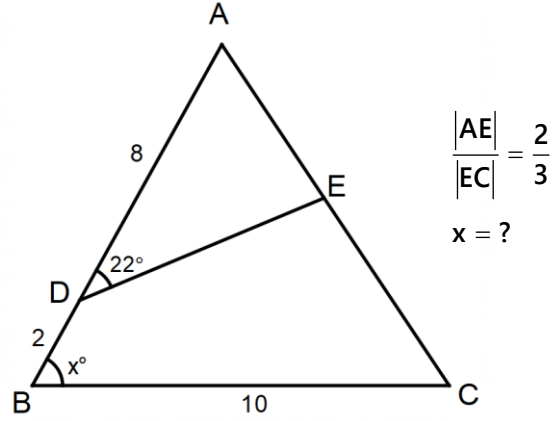
$$x = ?$$

4.



$$x = ?$$

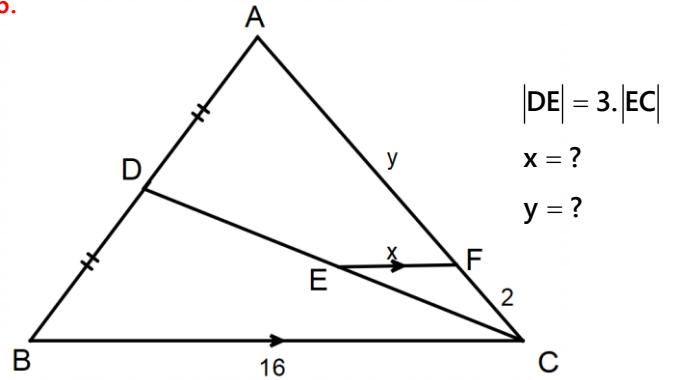
5.



$$\frac{|AE|}{|EC|} = \frac{2}{3}$$

$$x = ?$$

6.



$$|DE| = 3 \cdot |EC|$$

$$x = ?$$

$$y = ?$$

Daha fazla test ve konu anlatımı için matematikchi.net

1) 5

2) 22

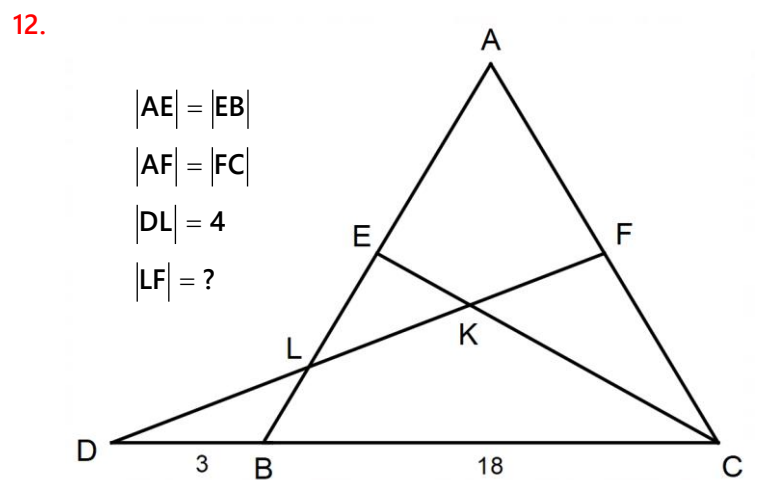
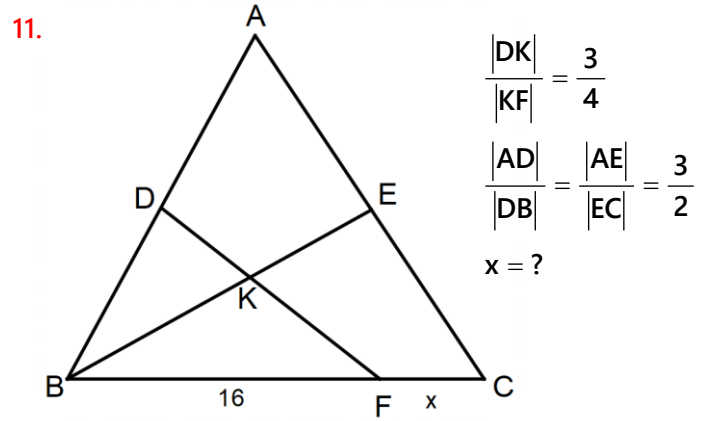
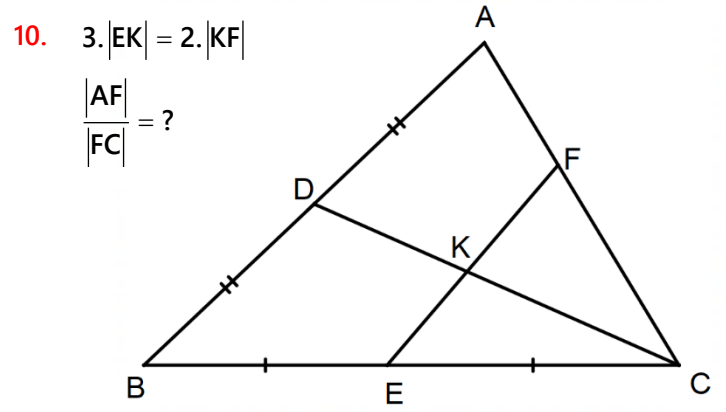
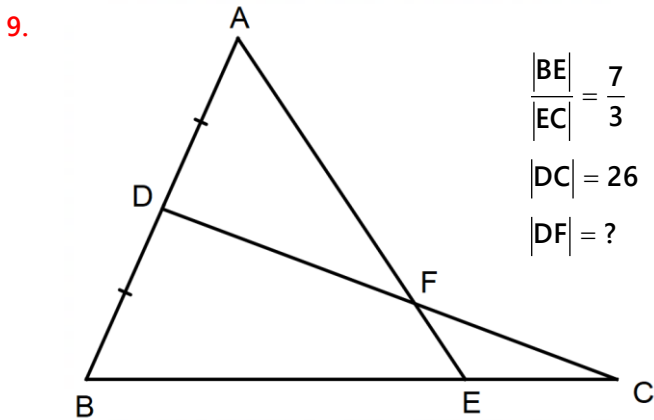
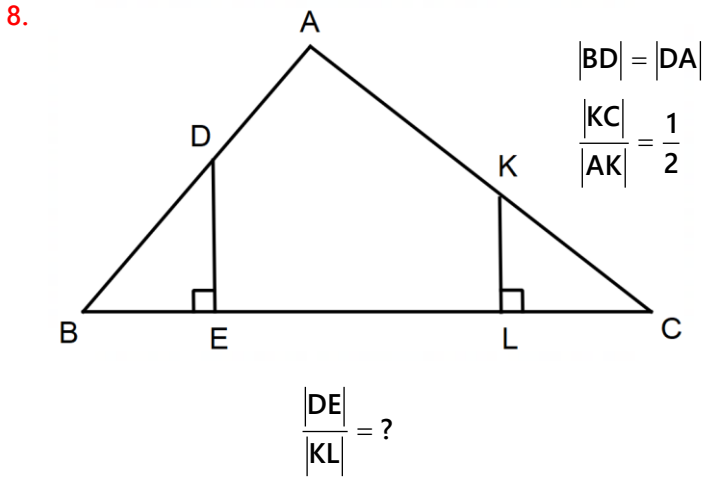
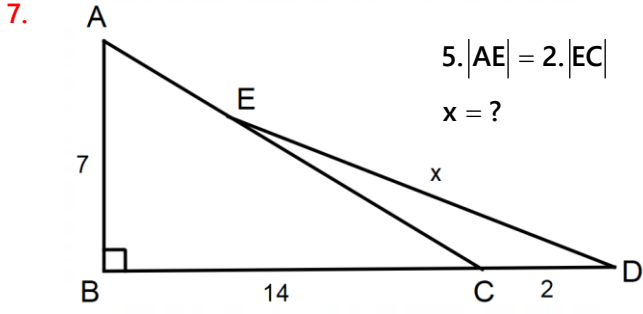
3) 12

4) 2

5) 44

6) x = 2 y = 14

12

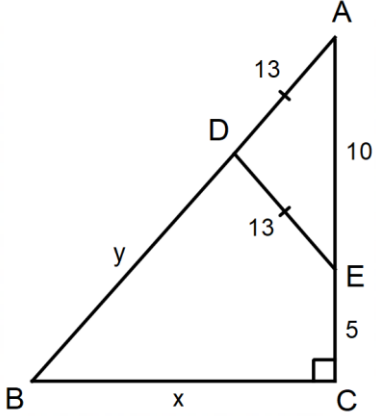


7 – Diğer Geometri Konuları ve Benzerlik :



A) İkizkenar Üçgen ve Benzerlik

1.



$$x = ?$$

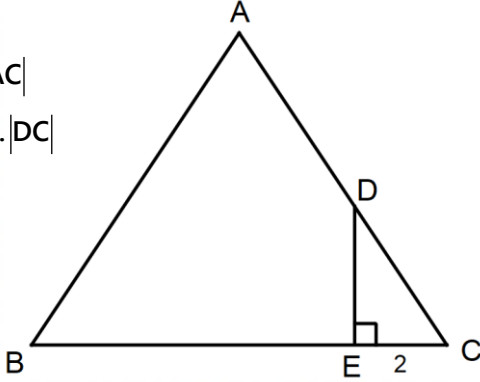
$$y = ?$$

2.

$$|AB| = |AC|$$

$$|AD| = 2 \cdot |DC|$$

$$|BE| = ?$$



3.

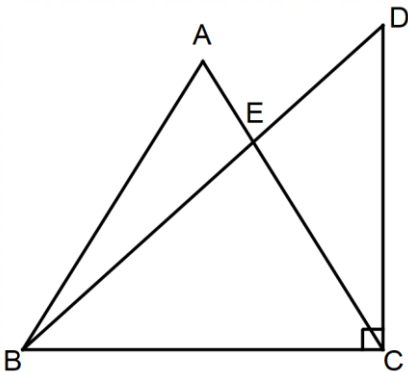
$$|AB| = |AC|$$

$$|AE| = 3 \text{ br}$$

$$|EC| = 6 \text{ br}$$

$$|ED| = 4 \text{ br}$$

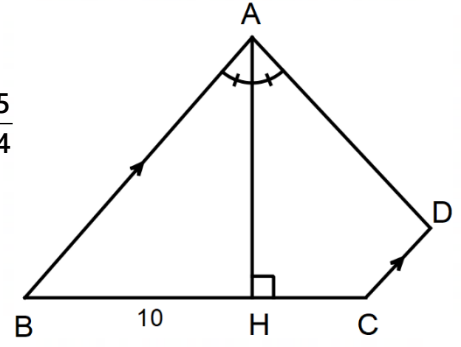
$$|BE| = ?$$



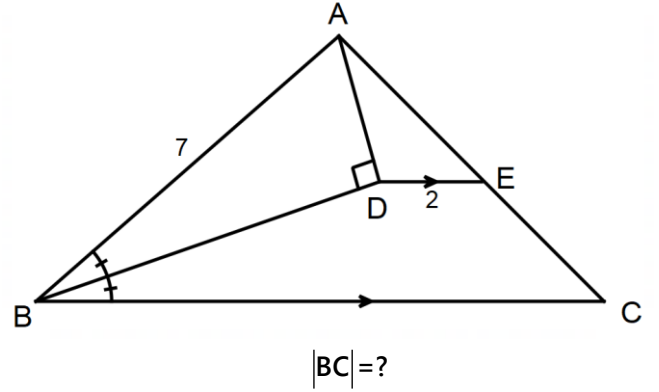
4.

$$\frac{|AB|}{|AD|} = \frac{5}{4}$$

$$|HC| = ?$$

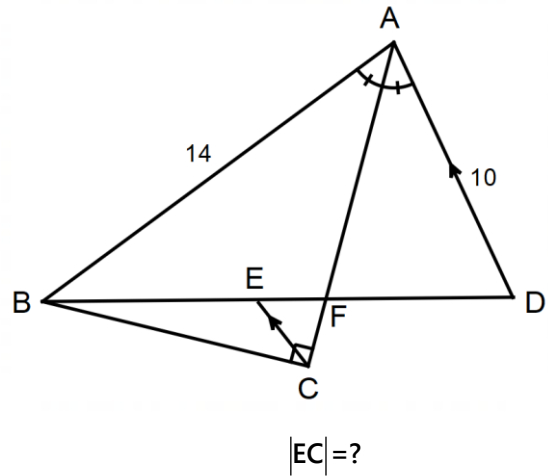


5.



$$|BC| = ?$$

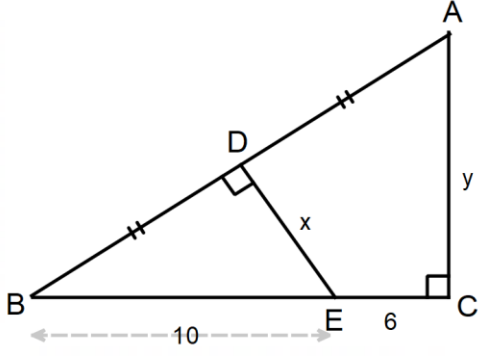
6.



$$|EC| = ?$$

B) Öklit ve Benzerlik

1.

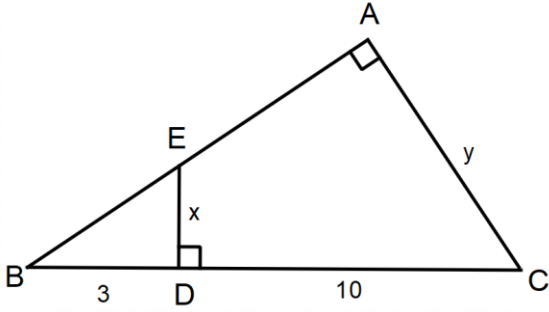


$$x = ?$$

$$y = ?$$



2.

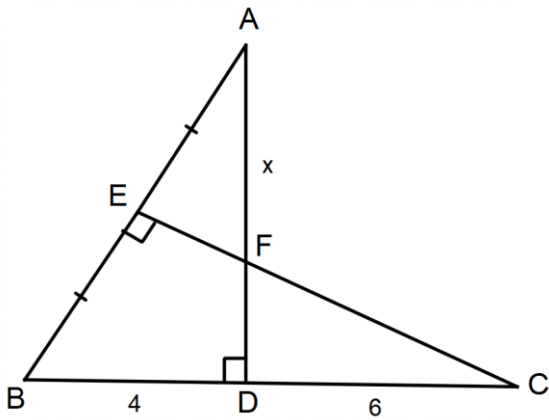


$$\frac{|BE|}{|EA|} = \frac{1}{2}$$

$$x = ?$$

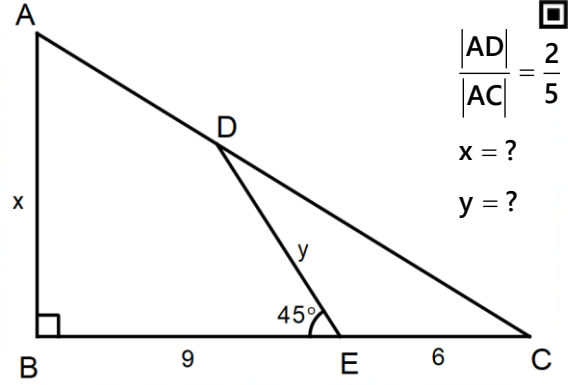
$$y = ?$$

3.



C) Özel Açılı Üçgenler ve Benzerlik

1.



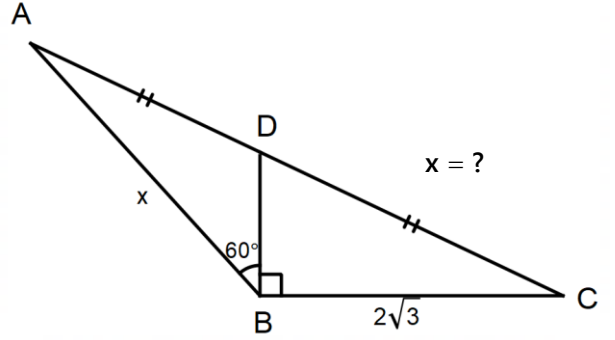
$$\frac{|AD|}{|AC|} = \frac{2}{5}$$

$$x = ?$$

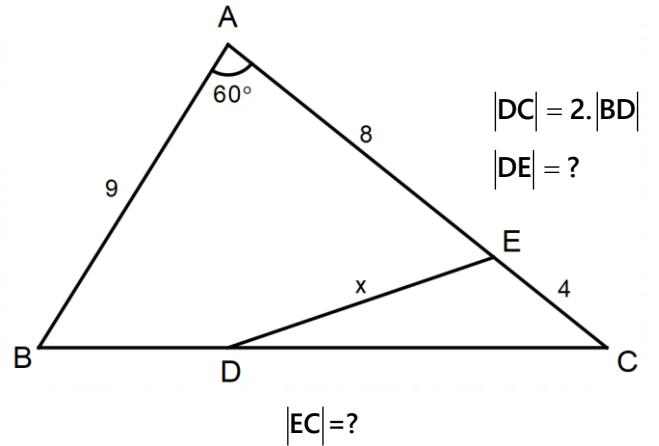
$$y = ?$$



2.



3.



$$|DC| = 2 \cdot |BD|$$

$$|DE| = ?$$

$$|EC| = ?$$

Daha fazla test ve konu anlatımı için matematikchi.net

1) $x = 2\sqrt{5}$ $y = 8$

2) $x = 2$ $y = 2\sqrt{13}$

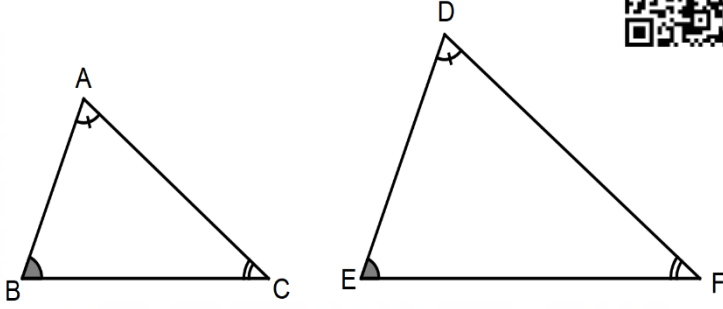
3) 5

1) $x = 5$ $y = 3\sqrt{2}$

2) 4

3) $2\sqrt{7}$

8 – Açı Açı Açı Benzerliği :

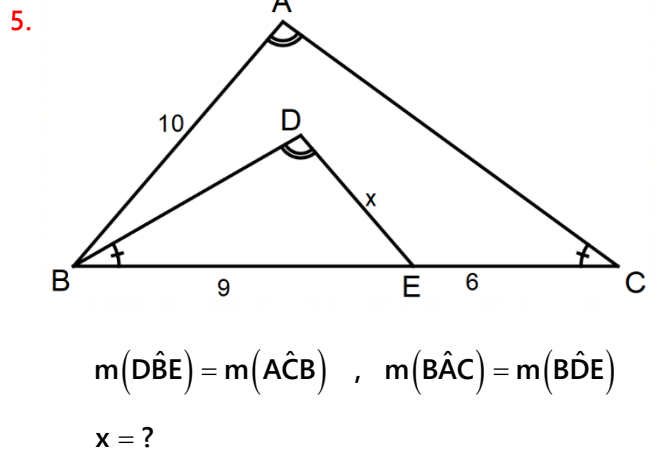
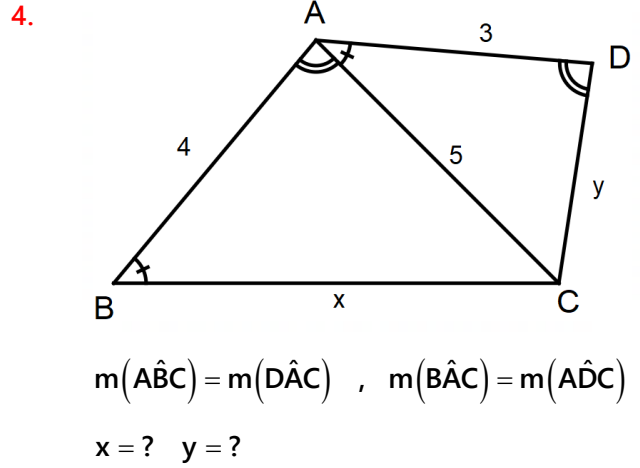
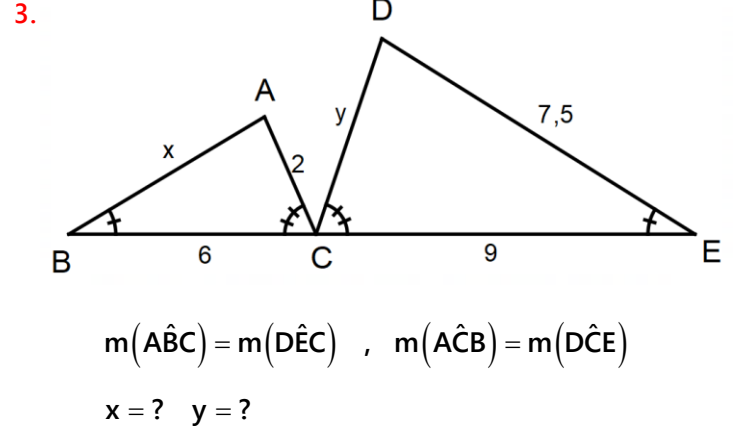
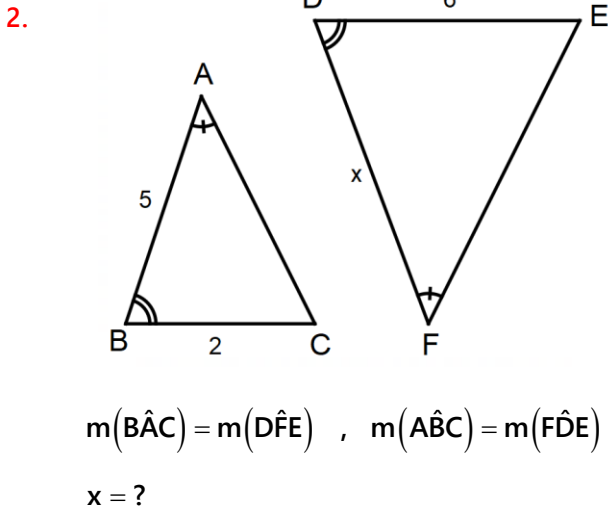
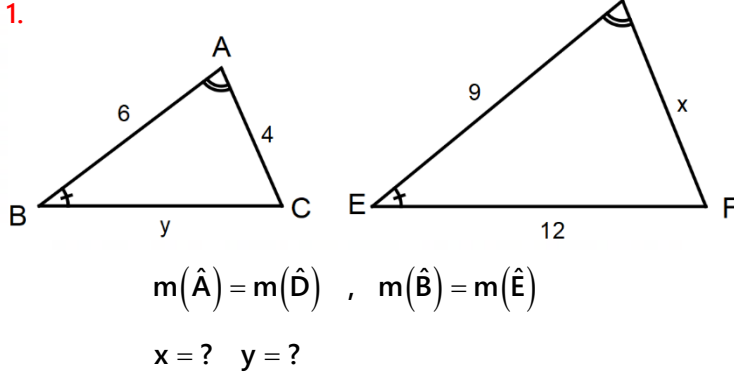


$$\triangle ABC \sim \triangle DEF$$

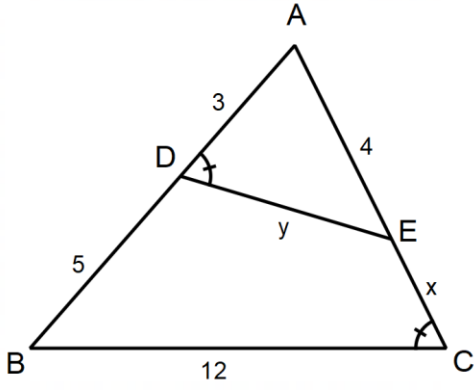
$$m(\hat{A}) = m(\hat{D}) , m(\hat{B}) = m(\hat{E}) , m(\hat{C}) = m(\hat{F})$$

$$\frac{|BC|}{|EF|} = \frac{|AC|}{|DF|} = \frac{|AB|}{|DE|}$$

Sorular :



6.



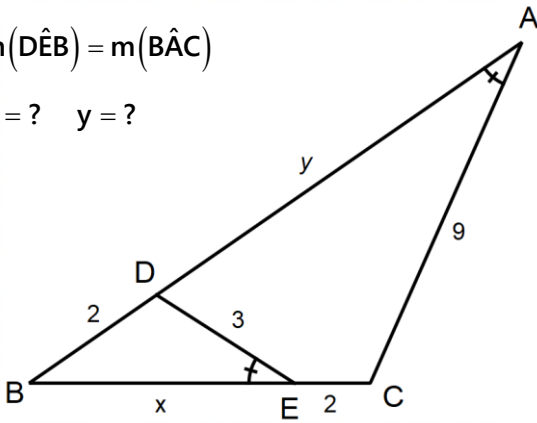
$$m(\hat{ADE}) = m(\hat{ACB})$$

$$x = ? \quad y = ?$$

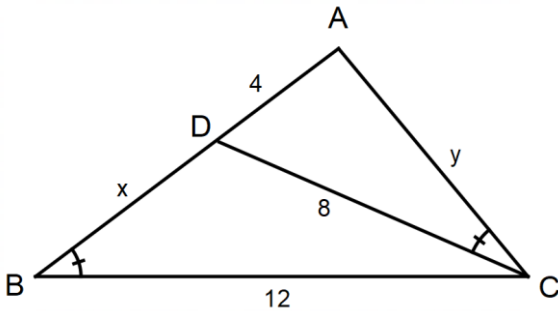
7.

$$m(\hat{DEB}) = m(\hat{BAC})$$

$$x = ? \quad y = ?$$



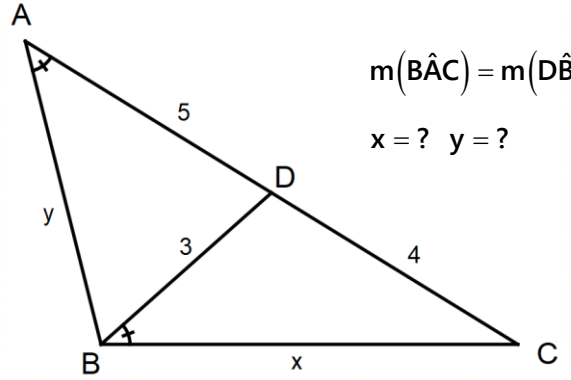
8.



$$m(\hat{ABC}) = m(\hat{DCA})$$

$$x = ? \quad y = ?$$

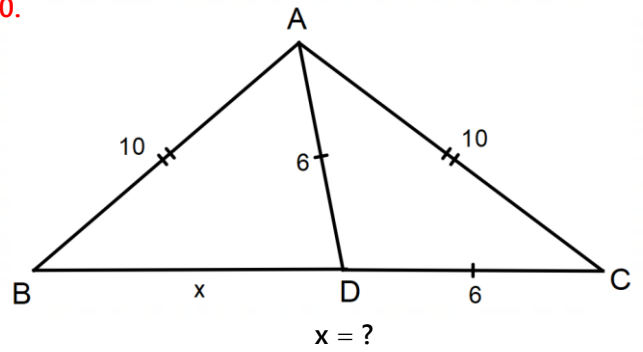
9.



$$m(\hat{BAC}) = m(\hat{DBC})$$

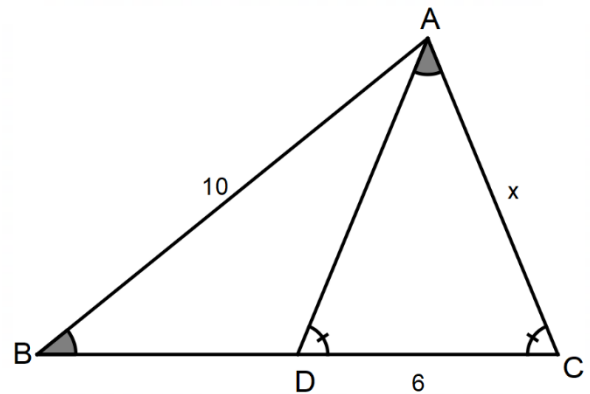
$$x = ? \quad y = ?$$

10.



$$x = ?$$

11.



$$m(\hat{ADC}) = m(\hat{ACD}) \quad , \quad m(\hat{ABC}) = m(\hat{DAC})$$

$$x = ?$$

Daha fazla test ve konu anlatımı için matematikchi.net

6) $x = 2 \quad y = 6$

7) $x = 4 \quad y = 10$

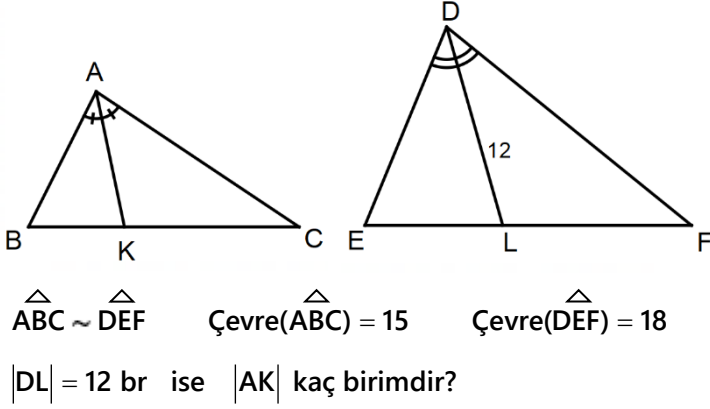
8) $x = 5 \quad y = 6$

9) $x = 6 \quad y = \frac{9}{2}$

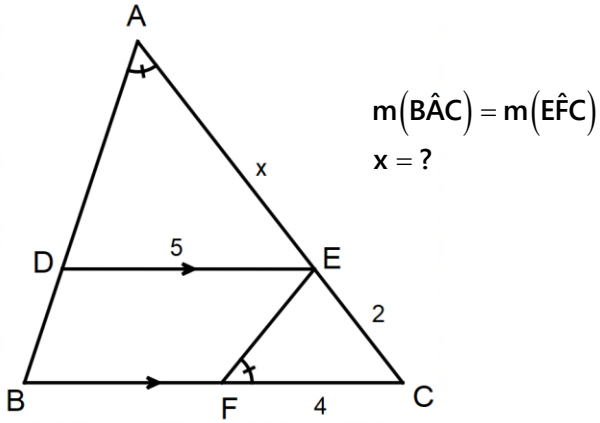
10) $\frac{32}{3}$

11) $2\sqrt{15}$

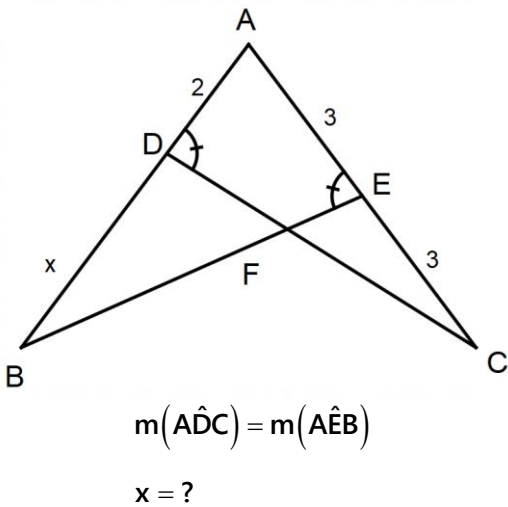
12.



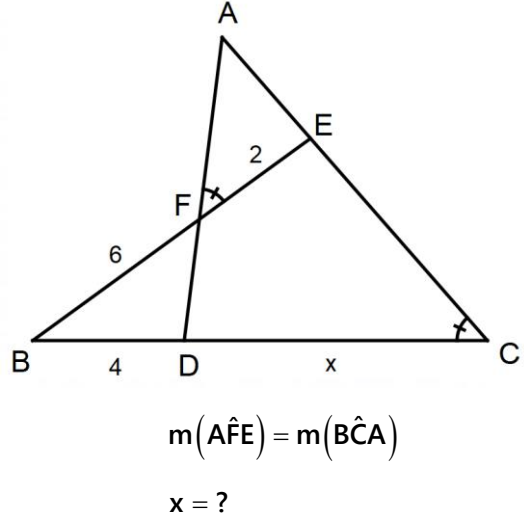
13.



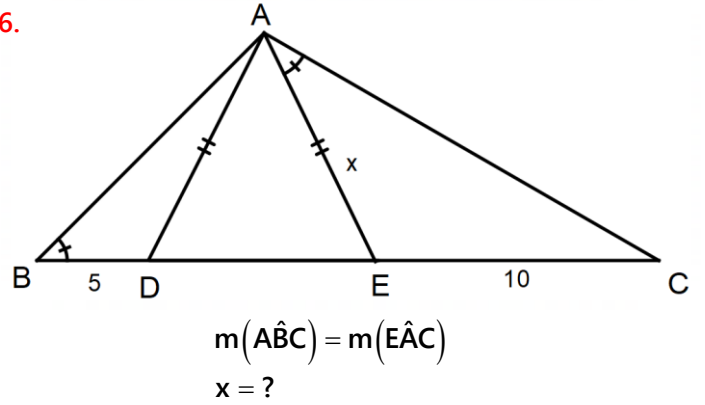
14.



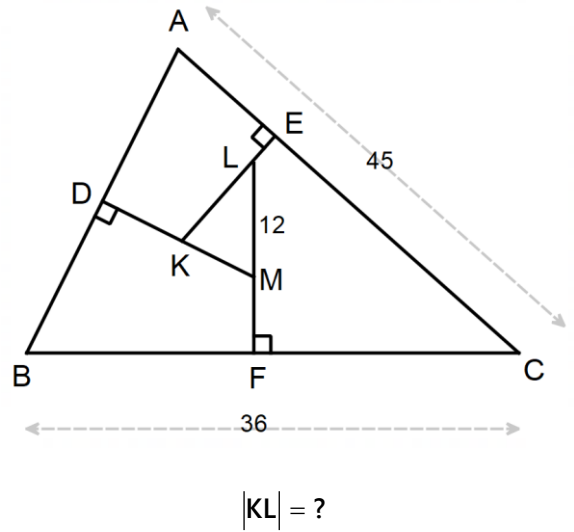
15.



16.



17.

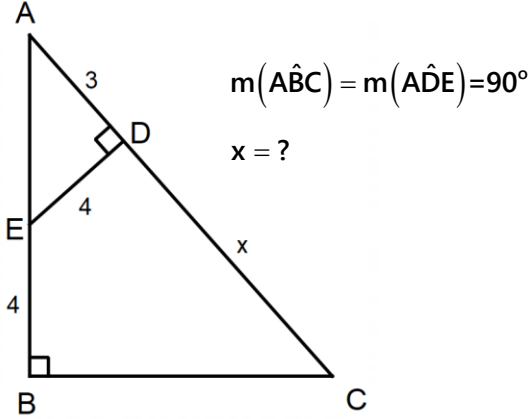


9 – Dik Üçgenlerde Açı Açı Açı Benzerliği :

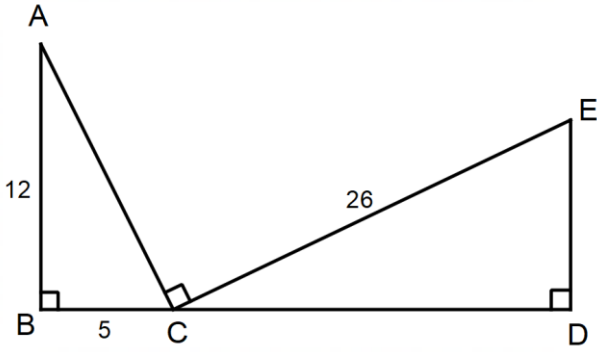


Sorular :

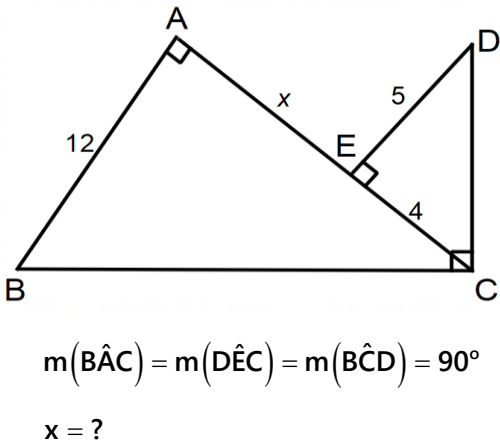
1.



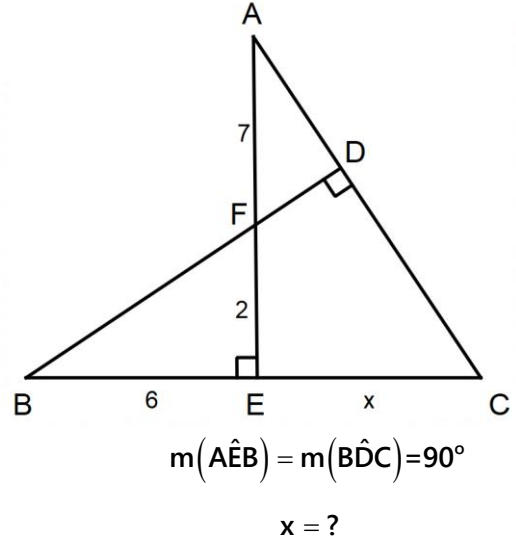
2.



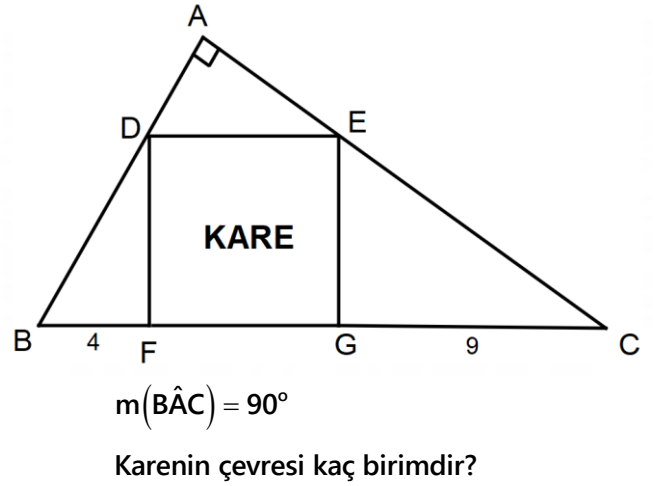
3.



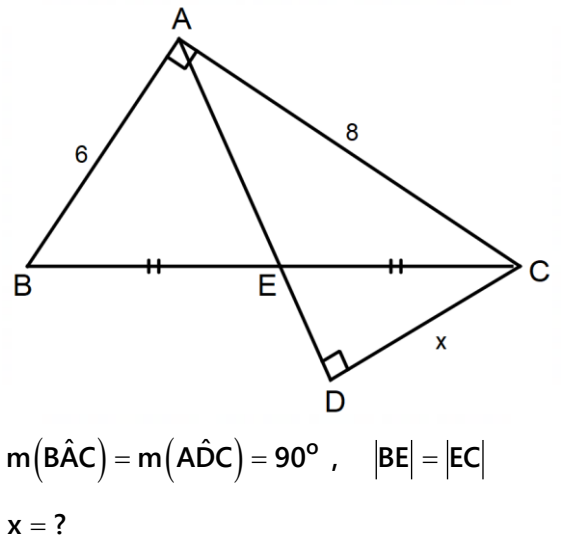
4.



5.



6.

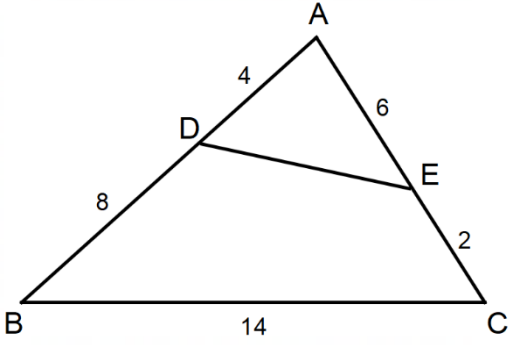


10 – Kenar Açık Kenar Benzerliği :



Sorular :

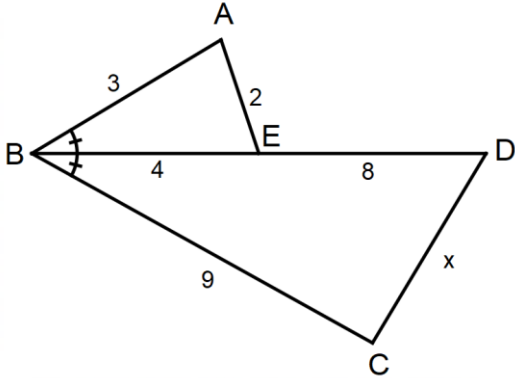
1.



Yukarıdaki şekilde verilene göre aşağıdakilerden hangisi veya hangileri doğrudur?

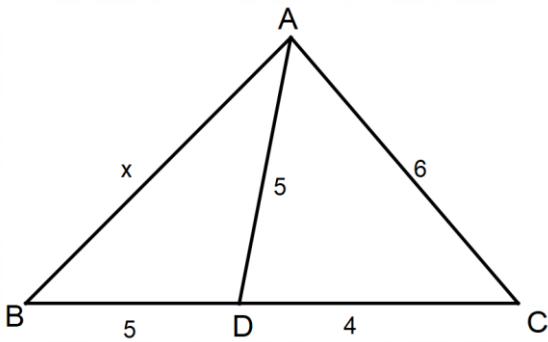
- I) $m(\hat{ADE}) = m(\hat{ACB})$
- II) $m(\hat{AED}) = m(\hat{ABC})$
- III) $|DE| = 7$

2.



$$m(\hat{ABE}) = m(\hat{DBC}), \quad x = ?$$

3.



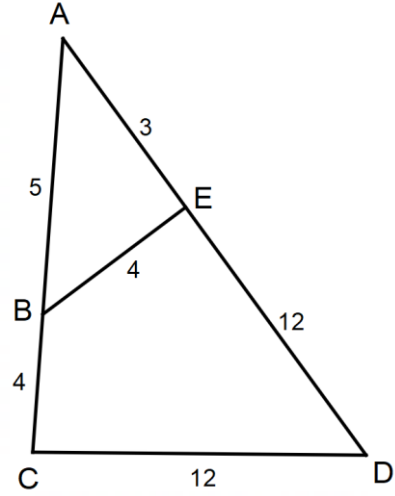
$$x = ?$$

11 – Kenar Kenar Kenar Benzerliği :



Sorular :

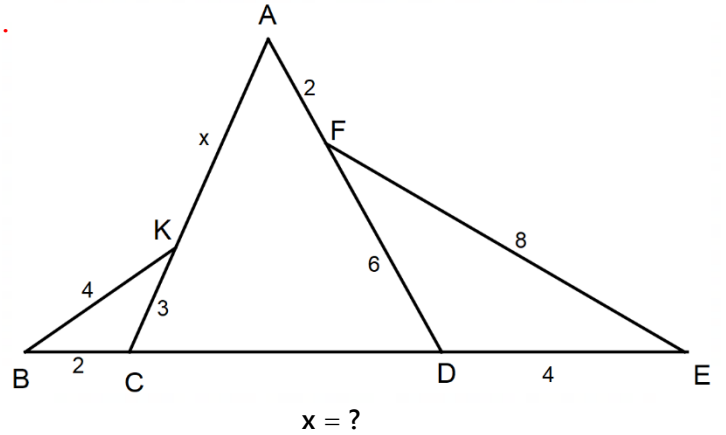
1.



Aşağıdakilerden hangisi veya hangileri doğrudur?

- I) $\hat{AEB} \sim \hat{ACD}$
- II) $m(\hat{ABE}) = m(\hat{ADC})$
- III) $m(\hat{AEB}) = m(\hat{ADC})$

2.

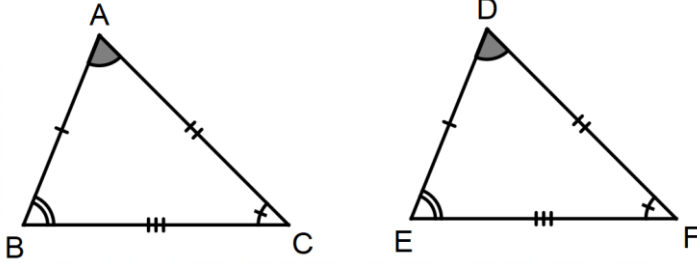


$$x = ?$$

12 – Eş Üçgenler :



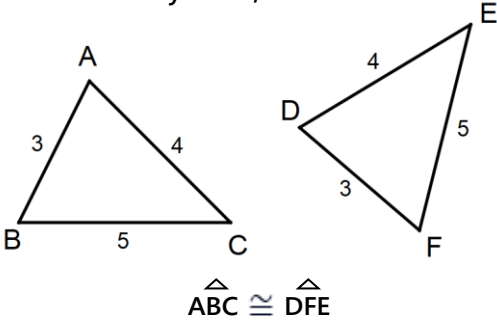
Tüm kenarları ve tüm açıları aynı olan üçgenlere eş üçgenler denir.
Diğer bir deyişle benzerlik oranı 1 olan üçgenlere eş üçgenler denir.



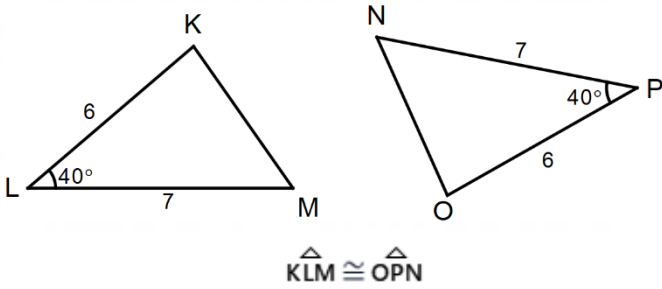
İki üçgenin eş olduğu $\triangle ABC \cong \triangle DEF$ şeklinde gösterilir.

İki üçgenin eş olduğunu nasıl anlarız ?

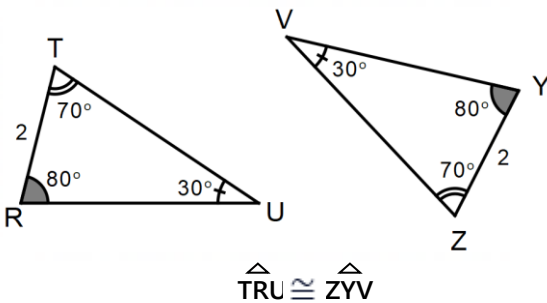
1 - Tüm kenarları aynı ise ;



2 - İki kenarı ve bu iki kenarın arasındaki açı aynı ise ;



3 - Üç açısı eşit ve eşit olan birer açılarının karşısındaki kenarları eşit ise ;



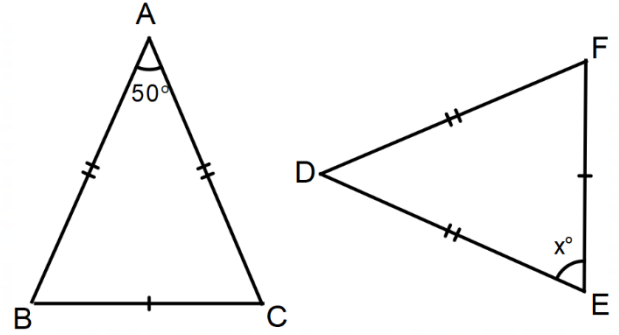
Sorular :

1. $\triangle ABC \cong \triangle DEF$

$m(\angle ABC) = 70^\circ$, $m(\angle EDF) = 60^\circ$ ise

$m(\angle BCA)$ kaç derecedir?

2.

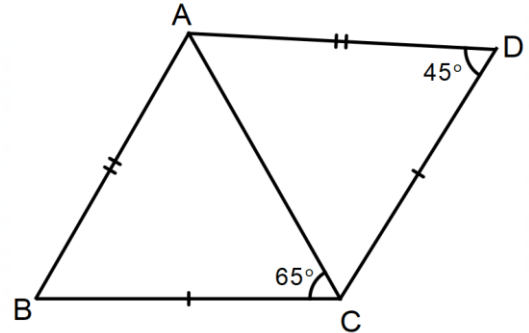


$|AB| = |AC| = |DE| = |DF|$, $|BC| = |EF|$

$m(\angle BAC) = 50^\circ$

$x = ?$

3.



$|AB| = |AD|$, $|BC| = |CD|$

$m(\angle BAD) = ?$

4.

$|AC| = |DC|$, $|BC| = |EC|$
 $|AB| = (2x + 5)$ birim , $|DE| = (4x - 15)$ birim
 $|AB|$ kaç birimdir?

5.

$x = ?$

6.

$m(\hat{A}BD) = m(\hat{E}CD)$
 $m(\hat{A}DB) = m(\hat{E}DC) = 90^\circ$
 $|EC|$ kaç birimdir?

7.

$m(\hat{A}EB) = 90^\circ$
 $m(\hat{A}BC) = 90^\circ$
 $m(\hat{C}DB) = 90^\circ$
 $|DE|$ kaç birimdir?

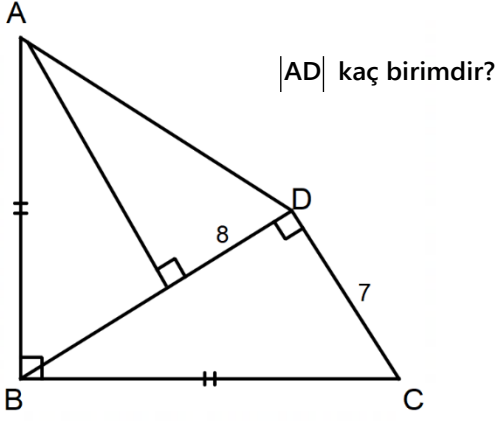
8.

$m(\hat{A}BC) = 90^\circ$
 $m(\hat{B}AD) = 90^\circ$
 $m(\hat{A}ED) = 90^\circ$
 $|DE|$ kaç birimdir?

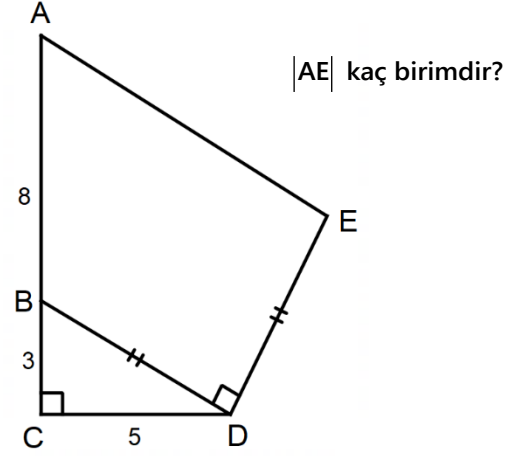
9.

ABCD kare
 $m(\hat{D}EC) = 90^\circ$
 $m(\hat{C}FB) = 90^\circ$
 $|AB|$ kaç birimdir?

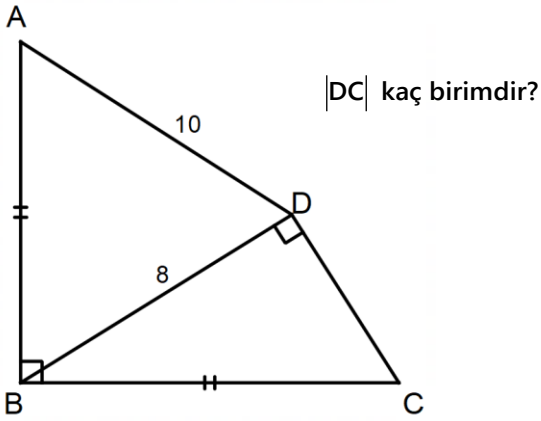
10.



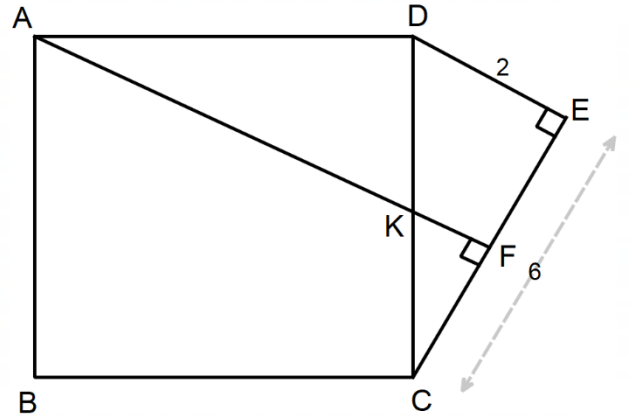
13.



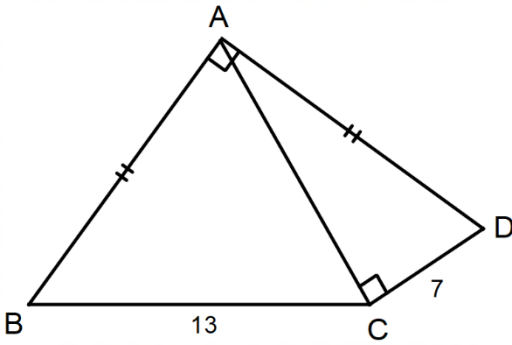
11.



14.



12.



15.

