



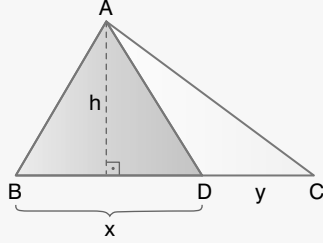
## ÜÇGENDE ALAN - 2



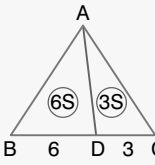
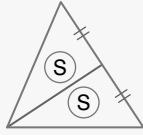
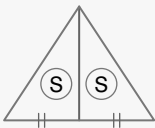
KODU OKUT

## Yükseklikleri Eşit Üçgenlerin Alanlarının Oranı

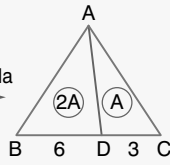
Yükseklikleri eşit üçgenlerin alanlarının oranı, bu üçgenlere ait taban uzunluklarının oranına eşittir.



$$\frac{\text{Alan}(ABD)}{\text{Alan}(ADC)} = \frac{x}{y}$$

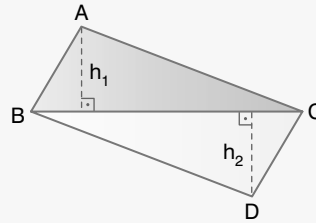


ya da

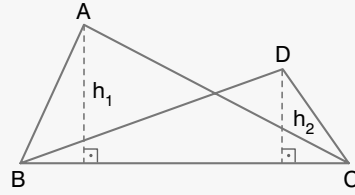


## Tabanları Eşit Üçgenlerin Alanlarının Oranı

İki üçgenin tabanları eşit ise alanları oranı bu tabanlara ait yüksekliklerin oranına eşittir.

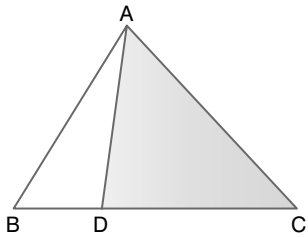


$$\frac{\text{Alan}(ABC)}{\text{Alan}(BCD)} = \frac{h_1}{h_2}$$



$$\frac{\text{Alan}(ABC)}{\text{Alan}(BCD)} = \frac{h_1}{h_2}$$

## Örnek 1

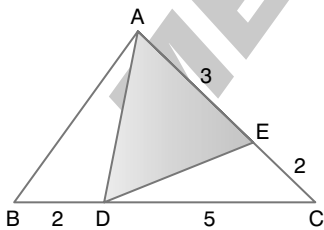


$$|DC| = 3|BD|$$

$$A(ABD) = 10 \text{ cm}^2$$

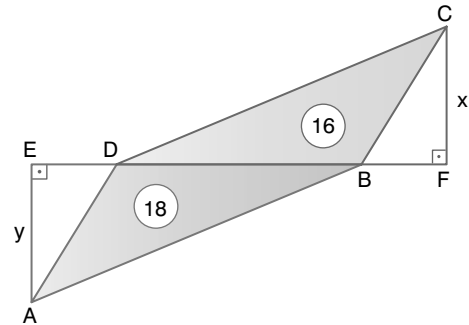
$$A(ADC) = ?$$

## Örnek 2



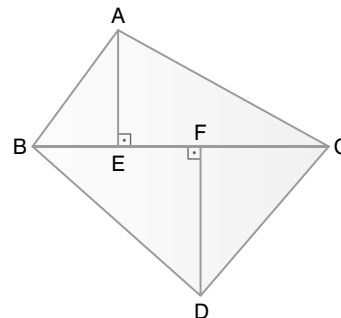
$$\frac{A(DAE)}{A(ABC)} = ?$$

## Örnek 3



$$A(ADB) = 18 \text{ cm}^2, A(CDB) = 16 \text{ cm}^2 \text{ ise } \frac{x}{y} = ?$$

## Örnek 4



$$[AE] \perp [BC]$$

$$[DF] \perp [BC]$$

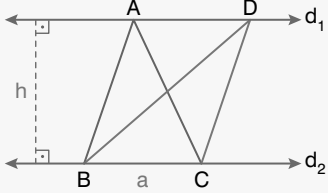
$$\frac{|AE|}{|DF|} = \frac{2}{5}$$

$\text{Alan}(ABDC) = 42 \text{ cm}^2$  olduğuna göre,  $\text{Alan}(BDC)$  kaç  $\text{cm}^2$  dir?

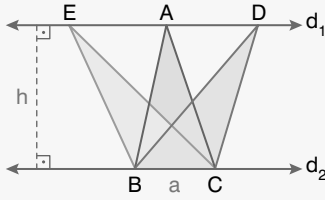


### Tabanı ve Yüksekliği Eşit Olan Üçgenler

Birer kenarları ve bu kenarlara ait yükseklikleri eşit olan üçgenlerin alanları eşittir.

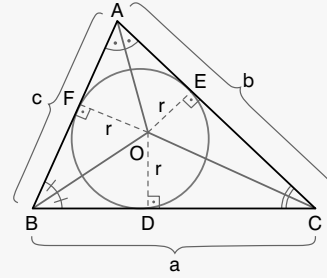


$d_1 \parallel d_2$  ise  $\text{Alan}(ABC) = \text{Alan}(DBC)$  olur.



$\text{Alan}(EBC) = \text{Alan}(ABC) = \text{Alan}(DBC)$  olur.

### Çevresi ve İç Teğet Çemberinin Yarıçapı Verilen Üçgenin Alanı



$$2u = a + b + c \text{ ise,}$$

$$u = \frac{a + b + c}{2} \text{ dir.}$$

$$\text{Alan}(BOC) = \frac{a \cdot r}{2}$$

$$\text{Alan}(AOC) = \frac{b \cdot r}{2}$$

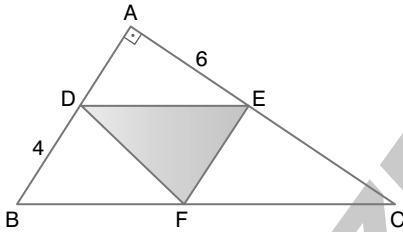
$$\text{Alan}(AOB) = \frac{c \cdot r}{2}$$

$$\left. \begin{array}{l} \text{Alan}(BOC) = \frac{a \cdot r}{2} \\ \text{Alan}(AOC) = \frac{b \cdot r}{2} \\ \text{Alan}(AOB) = \frac{c \cdot r}{2} \end{array} \right\} \text{Alan}(ABC) = \frac{a \cdot r}{2} + \frac{b \cdot r}{2} + \frac{c \cdot r}{2}$$

$$= \left( \frac{a + b + c}{2} \right) \cdot r$$

$$\text{Alan}(ABC) = u \cdot r \text{ olur.}$$

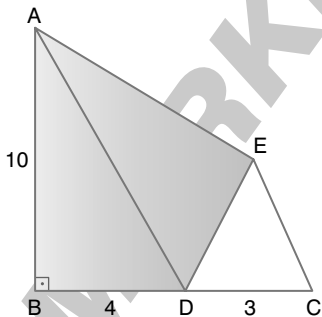
#### Örnek 5



$[DE] \parallel [BC]$

$A(FDE) = ?$

#### Örnek 6



$[AB] \perp [BC]$

$[AD] \parallel [EC]$

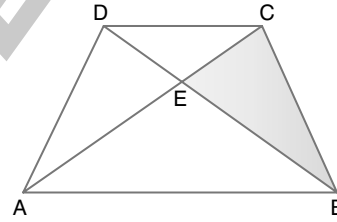
$|AB| = 10 \text{ cm}$

$|BD| = 4 \text{ cm}$

$|DC| = 3 \text{ cm}$

Yukarıdaki verilere göre,  $\frac{A(ABD)}{A(EAD)}$  oranı kaçtır?

#### Örnek 7



$[AC] \cap [BD] = \{E\}$

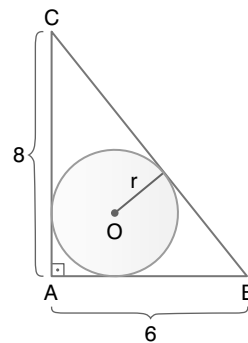
$[DC] \parallel [AB]$

$A(AEB) = 40 \text{ cm}^2$

$A(DAB) = 60 \text{ cm}^2$

$A(ECB) = ?$

#### Örnek 8



ABC bir üçgen

$[CA] \perp [AB]$

$|AB| = 6 \text{ cm}$

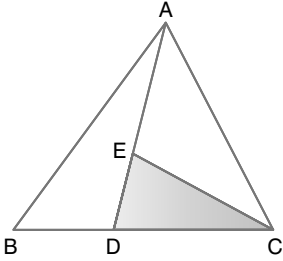
$|AC| = 8 \text{ cm}$

O; iç teğet çemberin merkezi olduğuna göre, iç teğet çemberin yarıçapı kaç cm dir?



## Üçgende Alan - 2

## Örnek 9



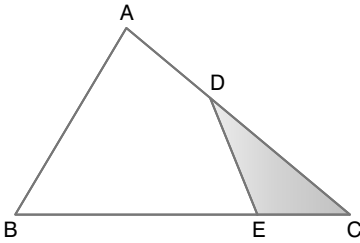
ABC bir üçgen

$$3|ED| = 2|AE|$$

$$2|DC| = 5|BD|$$

$A(ABC) = 21 \text{ cm}^2$  olduğuna göre,  $A(CED)$  kaç  $\text{cm}^2$  dir?

## Örnek 10



ABC bir üçgen

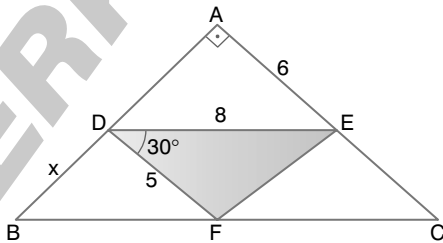
$$|DC| = 2|AD|$$

$$|BE| = 3|EC|$$

$$A(DEC) = 20 \text{ cm}^2$$

Yukarıdaki verilere,  $A(ABC)$  kaç  $\text{cm}^2$  dir?

## Örnek 11



ABC bir dik üçgen,  $[BA] \perp [AC]$ ,  $[DE] \parallel [BC]$

$m(\widehat{EDF}) = 30^\circ$ ,  $|AE| = 6 \text{ cm}$ ,  $|DE| = 8 \text{ cm}$ ,  $|DF| = 5 \text{ cm}$

Yukarıdaki verilere göre,  $|BD| = x$  kaç  $\text{cm}$  dir?

## Örnek 12

Zeynep öğretmen derste öğrencilerine çizim yaptırarak bir soru soruyor.

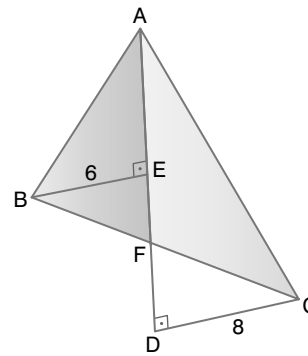
→ Bir ABC üçgenini çizin.

→  $[BC]$  üzerinde  $|DC| = 3|BD|$  olacak şekilde bir D noktası alıp  $[AD]$  yi çizin.

→  $[AC]$  üzerinde  $|AE| = 2|EC|$  olacak şekilde bir E noktası alıp  $[DE]$  yi çizin.

$A(ABC) = 80 \text{ cm}^2$  ise  $A(DEC)$  kaç  $\text{cm}^2$  dir?

## Örnek 13



ABC bir üçgen

$$[AD] \perp [DC]$$

$$[AD] \perp [BE]$$

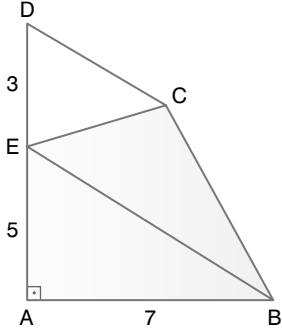
$$|BE| = 6 \text{ cm}$$

$$|DC| = 8 \text{ cm}$$

Yukarıdaki verilere göre,  $\frac{A(CAF)}{A(BAF)}$  oranı kaçtır?



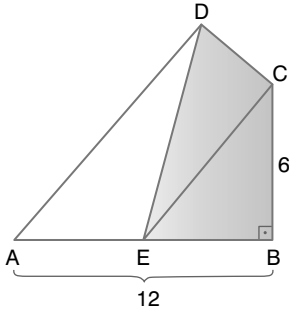
## Örnek 14



- $[AB] \perp [DA]$   
 $[DC] \parallel [EB]$   
 $|DE| = 3 \text{ cm}$   
 $|EA| = 5 \text{ cm}$   
 $|AB| = 7 \text{ cm}$

Yukarıdaki verilere göre,  $A(ABCE)$  kaç  $\text{cm}^2$  dir?

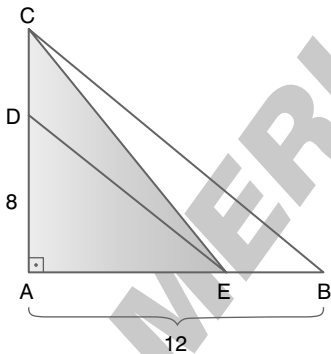
## Örnek 15



- $[AB] \perp [CB]$   
 $[AD] \parallel [EC]$   
 $|CB| = 6 \text{ cm}$   
 $|AB| = 12 \text{ cm}$

Yukarıdaki verilere göre,  $A(EBCD)$  kaç  $\text{cm}^2$  dir?

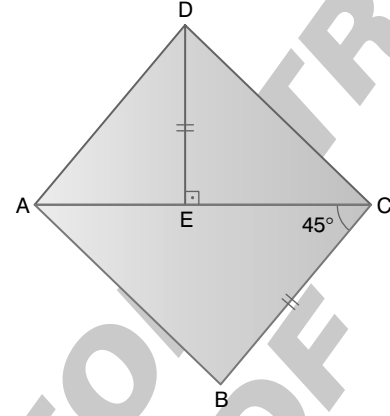
## Örnek 16



- $ABC$  bir üçgen  
 $[CA] \perp [AB]$   
 $[DE] \parallel [CB]$   
 $|AD| = 8 \text{ cm}$   
 $|AB| = 12 \text{ cm}$

Yukarıdaki verilere göre,  $A(AEC)$  kaç  $\text{cm}^2$  dir?

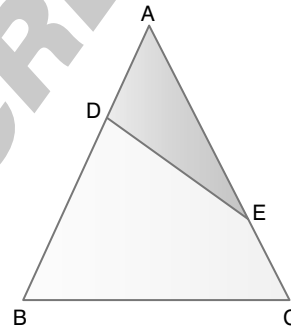
## Örnek 17



- $[DE] \perp [AC]$ ,  $|DE| = |BC|$ ,  $m(\widehat{ACB}) = 45^\circ$

Yukarıdaki verilere göre,  $\frac{A(ABC)}{A(ADC)}$  oranı kaçtır?

## Örnek 18



- $ABC$  bir üçgen  
 $|AE| = 2|EC|$   
 $|BD| = 3|DA|$

Yukarıdaki verilere göre,  $\frac{A(ADE)}{A(BCED)}$  oranı kaçtır?