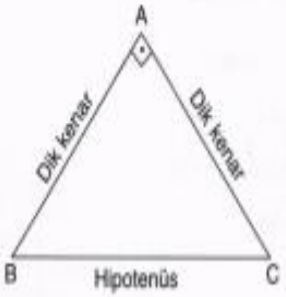
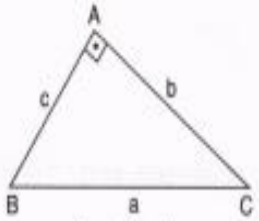
PİSAGOR BAĞINTISI

Bir açısının ölçüsü 90° olan üçgene **dik üçgen**, 90° nin karşısındaki kenara **hipotenüs** denir. Diğer kenarlara **dik kenar** adı verilir.



Pisagor Teoremi



$a^2 = b^2 + c^2$

Bir dik üçgende hipotenüsün uzunluğunun karesi, dik kenarların uzunluklarının karelerinin toplamına eşittir.

NOT

3, 4, 5

5, 12, 13

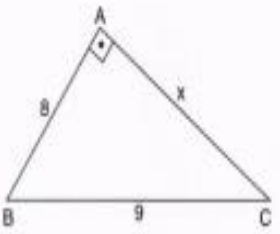
8, 15, 17

7, 24, 25

Kenar uzunlukları yandaki sayılarla orantılı olan üçgenler dik üçgendir.

Aşağıdaki sorularda x ile belirtilen uzunlukları bulunuz.

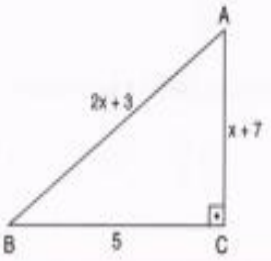
1.



$9^2 = x^2 + 8^2$

$x = \sqrt{17}$

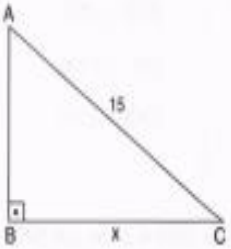
2.



$(2x + 3)^2 = 5^2 + (x + 7)^2$

$x = 5$

3.

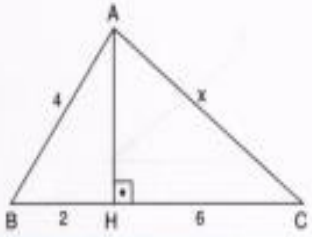


$3|BC| = 4|AB|$

$x^2 + \left(\frac{3x}{4}\right)^2 = 15^2$

$x = 12$

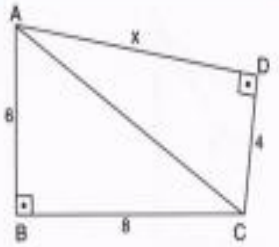
1.



$(2\sqrt{3})^2 + 6^2 = x^2$

$x = 4\sqrt{3}$

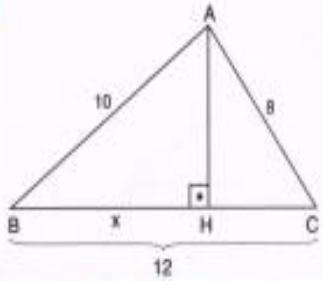
2.



$10^2 = 4^2 + x^2$

$x = 2\sqrt{21}$

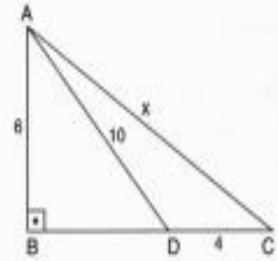
3.



$10^2 - x^2 = 8^2 - (12 - x)^2$

$x = \frac{15}{2}$

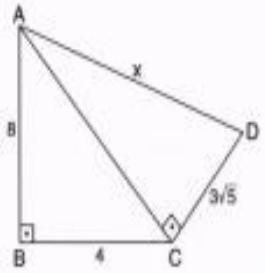
1.



$6^2 + 12^2 = x^2$

$x = 6\sqrt{5}$

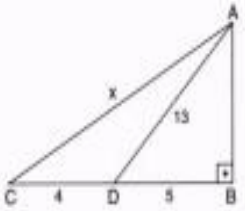
2.



$|AC| = 4\sqrt{5}$

$3\sqrt{5}$ / $4\sqrt{5}$ / $x = 5\sqrt{5}$

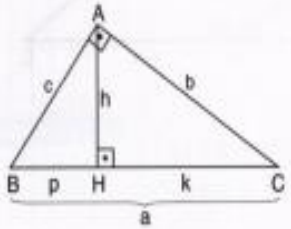
3.



$12^2 + 9^2 = x^2$

$x = 15$

ÖKLİD BAĞINTISI



Dik üçgende dik köşeden hipotenüse dik indirilmişse

i. $h^2 = p.k$

ii. $c^2 = p\,.\,(p + k)$

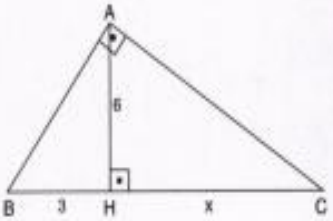
iii. $b^2 = k\,.\,(p + k)$

iv. $a\,.\,h = b\,.\,c$

bağıntıları vardır.

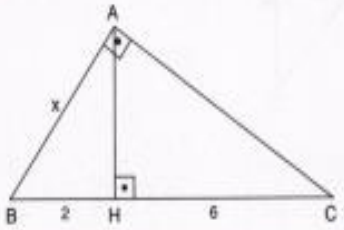
Aşağıdaki sorularda x ile belirtilen uzunlukları bulunuz.

1.



$6^2 = 3 \cdot x \Rightarrow x = 12$

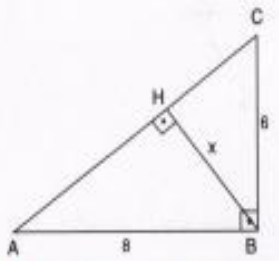
2.



$x^2 = 2 \cdot 8$

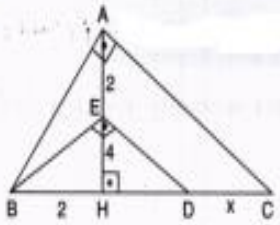
$x = 4$

3.



$6 \cdot 8 = 10 \cdot x \Rightarrow x = 4,8$

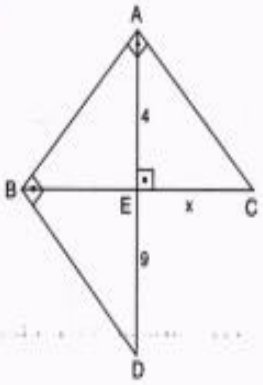
1.



$4^2 = 2 \cdot |HD| \Rightarrow |HD| = 8$

$6 = 2 \cdot (8 + x) \Rightarrow x = 10$

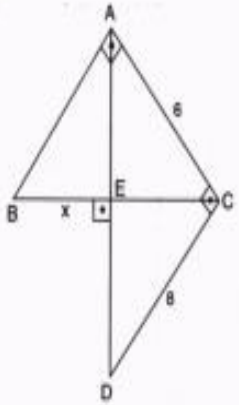
2.



$|BE|^2 = 4 \cdot 9 \Rightarrow |BE| = 6$

$4^2 = 6 \cdot x \quad \Rightarrow x = \frac{8}{3}$

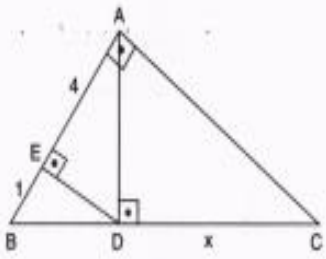
3.



$|EC| = 4 \cdot 8$

$6^2 = 4,8 \cdot (4,8 + x)$

1.

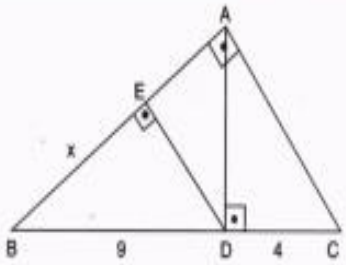


$|ED|^2 = 1 \cdot 4 \Rightarrow |ED| = 2$

$|AD| = 2\sqrt{5} \Rightarrow |BD| = \sqrt{5}$

$(2\sqrt{5})^2 = \sqrt{5} \cdot x \quad \Rightarrow x = 4\sqrt{5}$

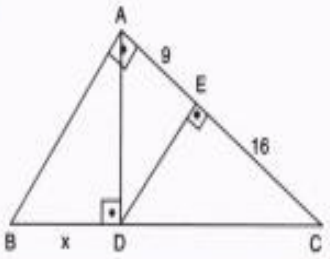
2.



$|EA| = \frac{4x}{9}$

$\left(\frac{13x}{9}\right)^2 = 9 \cdot 13 \Rightarrow x = \frac{27\sqrt{13}}{13}$

3.



$|DC|^2 = 16 \cdot 25 \Rightarrow |DC| = 20$

$25^2 = 20(20 + x) \Rightarrow x = \frac{45}{4}$