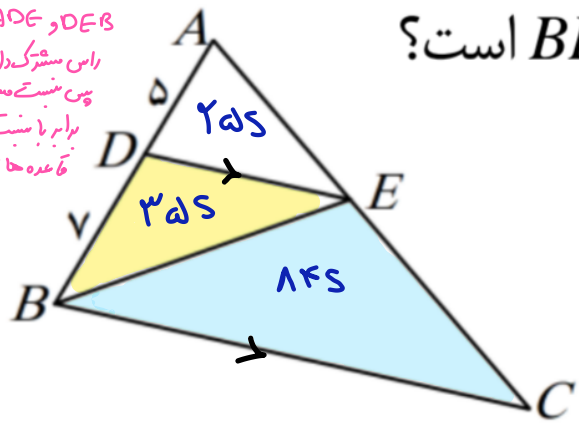


19

هستی رفتنی / یازدهم دفتر C

1

ADE و DEB
راس مشترک دارند
پس نسبت مسافت
برابر با نسبت
فاصله ها است



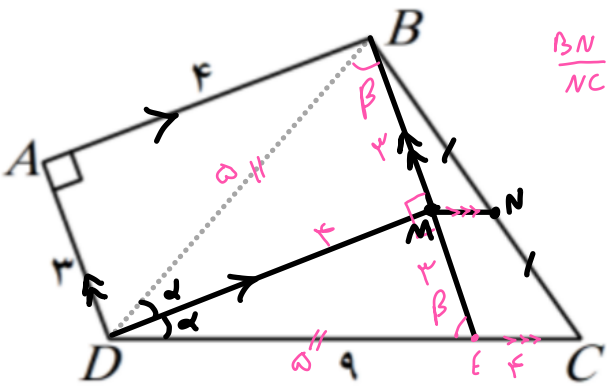
BD است؟ $\frac{S_{\triangle BCE}}{S_{\triangle BDE}} = ?$

$DE \parallel BC \xrightarrow{\text{تساوی}} \frac{AD}{AB} = \frac{DE}{BC} = \frac{5}{12}$
 $\rightarrow \frac{S_{\triangle ADE}}{S_{\triangle ABC}} = \left(\frac{5}{12}\right)^2 = \frac{25}{144}$

$\frac{S_{\triangle BCE}}{S_{\triangle BDE}} = \frac{18}{25} = \frac{12}{5} = \boxed{2,4}$

5

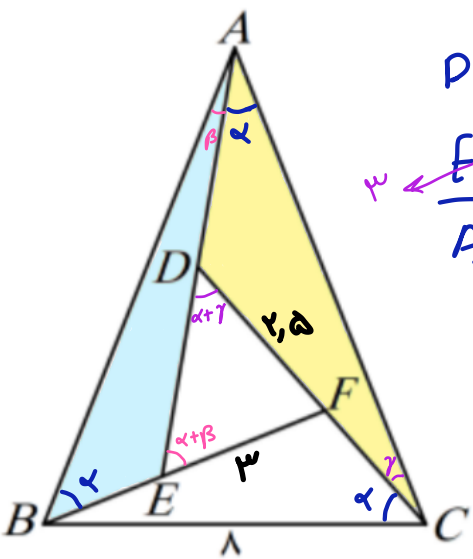
2



$\frac{BN}{NC} = \frac{BM}{ME} \rightarrow MN \parallel EC \Rightarrow \frac{MN}{EC} = \frac{1}{2} \rightarrow \boxed{MN=2}$

5

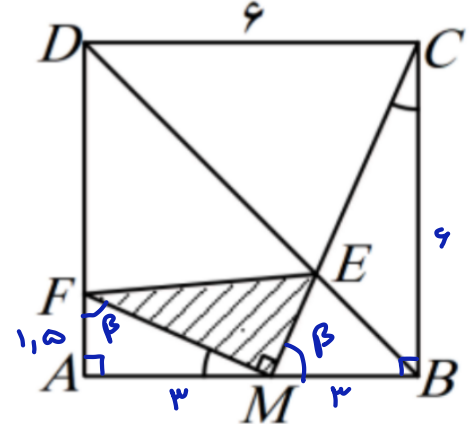
3



$\triangle DEF \sim \triangle ABC$
 $\frac{EF}{AB} = \frac{DF}{BC} \Rightarrow \boxed{AB=9,4}$

5

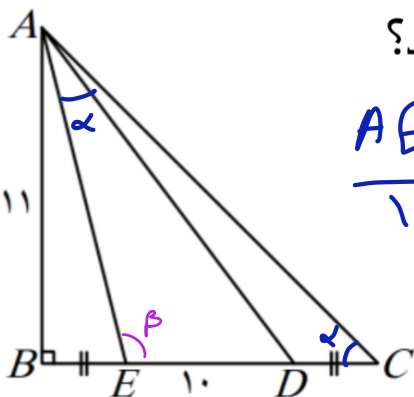
4



$\triangle BMC \sim \triangle AMF \rightarrow AF=1,2$
 $\triangle BME \sim \triangle CDM \rightarrow ME = \frac{1}{2} CE$ ①
 $MC = \sqrt{4^2 + 3^2} = 5$
① $ME = 2,5, CE = 5$
 $MF = \sqrt{\left(\frac{3}{2}\right)^2 + 3^2} = \frac{3}{2} \sqrt{5}$
 $S_{\triangle MEF} = \frac{1}{2} \left(\frac{3}{2} \sqrt{5}\right) (5) = \boxed{3,75}$

5

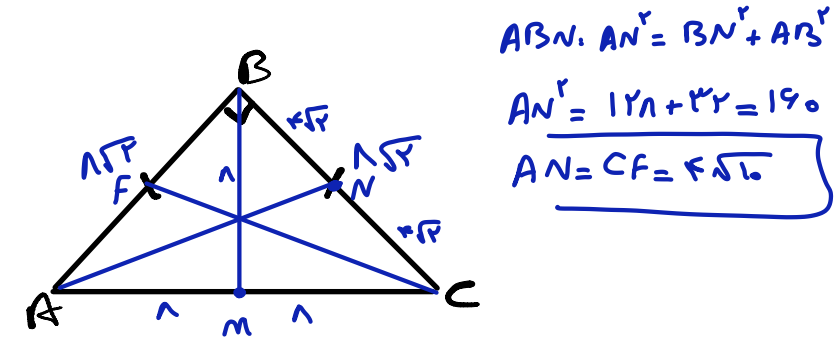
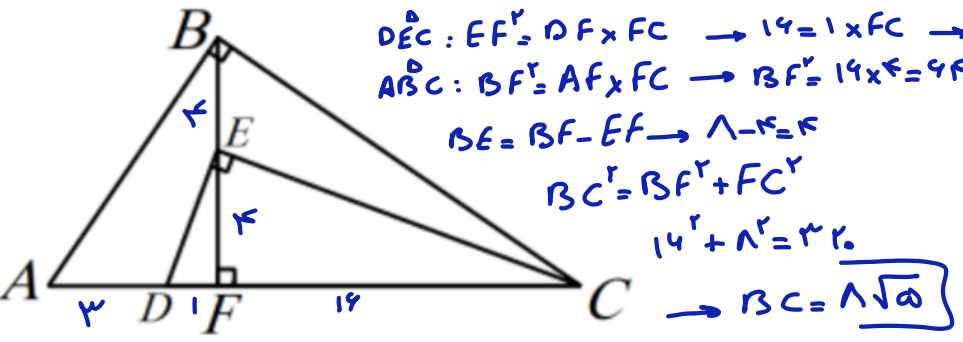
5



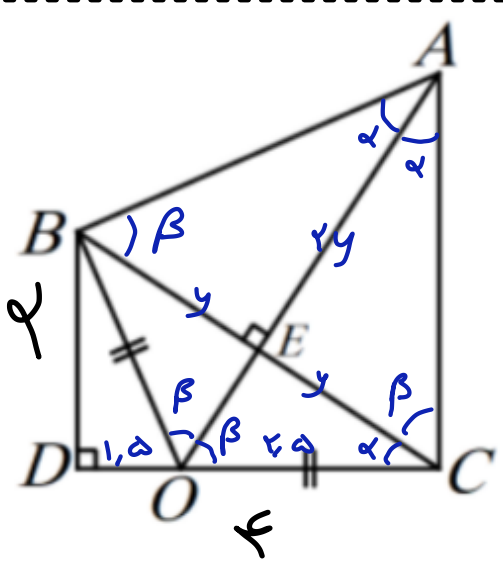
$\triangle AED \sim \triangle CEA$
 $\frac{AE}{10} = \frac{AC}{AD} = \frac{EC}{AE}$
 $10 + 10n = 10 + n^2$
 $n^2 - 10n - 10 = 0$
 $n = \boxed{12,1}$

1

4

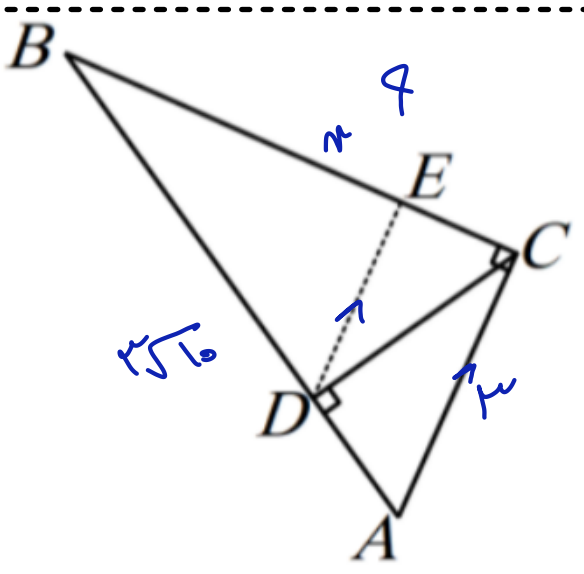


5



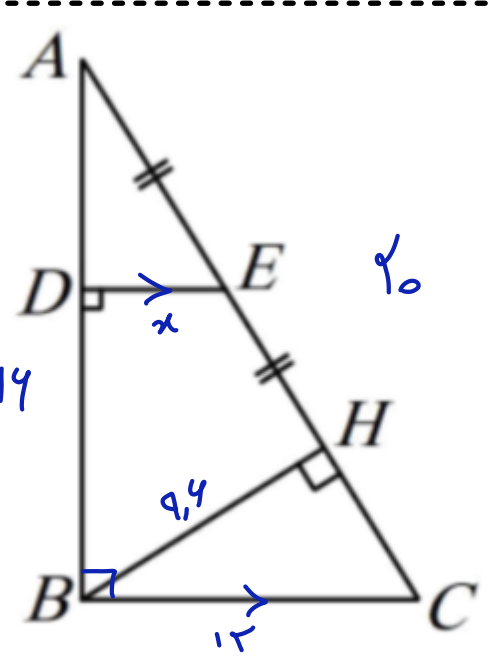
$\triangle BOD \sim \triangle AOE$
 $\tan \alpha = \frac{1}{5} = \frac{BO}{OE} \rightarrow BO = 5$
 $AE = 12$
 $\cos \alpha = \frac{5}{13}$
 $\triangle OEC: \cos \alpha = \frac{y}{15} = \frac{5}{13} \rightarrow y = \frac{75}{13}$
 $S_{ABE} = \frac{1}{2} \times 12 \times \frac{17}{2} = 51$

6



$\triangle ABC: DE \parallel AC \rightarrow \frac{n}{12} = \frac{DE}{12} \rightarrow DE = n$
 $DE^2 = n(12-n)$
 $\frac{n^2}{12} = 12n - n^2 \rightarrow \frac{n^2}{12} = 12n \rightarrow n = 12$

7



$BH \times 10 = 14 \times 12 \rightarrow BH = 16.8$
 $AH^2 = 14^2 - 16.8^2 = 196 - 282.24 = -86.24$
 $AH = 12.37$
 $AE = 9.4$
 $\triangle ABC: DE \parallel BC \rightarrow \frac{AE}{AC} = \frac{n}{BC} \rightarrow \frac{9.4}{14} = \frac{n}{14} \rightarrow n = 9.4$

8

$$\triangle CAE \approx \triangle AED \rightarrow \begin{cases} \alpha = \alpha \\ \alpha + 1 = \alpha + 1 \\ \hat{E} = \hat{E} \end{cases} \rightarrow \frac{AE}{ED} = \frac{EC}{AE}$$

$$\frac{\sqrt{2^r + 141}}{1.} = \frac{21 + 1.}{\sqrt{2^r + 141}} \rightarrow 22 = 141 \leq 141$$

