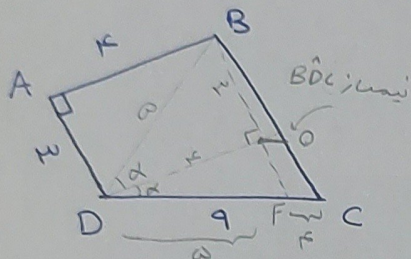


$$BC \parallel DE \Rightarrow \frac{S_{BCE}}{S_{BDE}}$$

ارتفاع مشترک یکسان پس نسبت مساحت ها برابر با نسبت قاعده هاست :
 $DE \parallel BC \rightarrow \frac{AB}{AD} = \frac{AC}{AE} = \frac{BC}{DE} = \frac{12}{2}$

$$\frac{S_{BCE}}{S_{BDE}} = \frac{\frac{1}{2} h \times BC}{\frac{1}{2} h \times DE} = \frac{12}{2} = 6$$

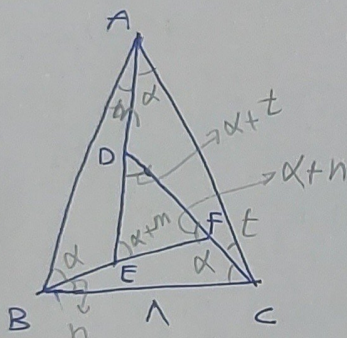
در ABCD، از نقاط B، D در پاره خط به ترتیب موازی AB، AD، طرفین رسم می‌کنیم تا نقطه M قطع شود
 BDC = 2BDM ؟ فاصله M از وسط BC



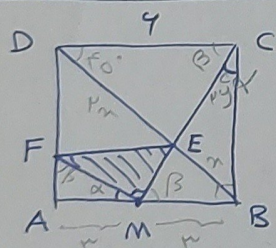
در A=90° مثلث A BMD مستطیل است
 DM = 1, BM = 3
 در مثلث MDB، M D F قائم الزامی است، پس D₁ = D₂ است
 FC = 4, DF = 0
 BM = MF = 3

$$\frac{BM}{BF} = \frac{MO}{FC} = \frac{3}{4} = \frac{1}{2} \rightarrow MO = 2$$

AB طول ۲۰، DF=۲، ۳=EF، A B F = C A E = B C D
 از زاویه ها را اسم کنار می‌کنیم زاویه DEF زاویه خارج مثلث ADC = ۱
 معادله $\alpha + t$ (بقیه زوایا را به همین شکل می‌نویسیم)

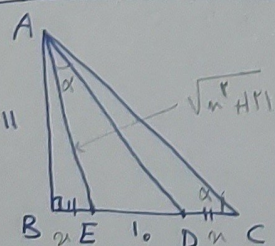


$$\frac{AB}{3} = \frac{1}{20} \rightarrow 20 AB = 24 \rightarrow AB = 4, 4$$

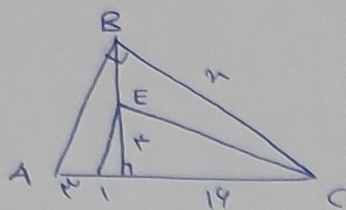


م بر AB، S.BCE = AMF، AB
 $\tan B = \frac{AM}{AF} = \frac{BC}{MB} \rightarrow \frac{3}{AF} = 2 \rightarrow AF = \frac{3}{2} \rightarrow MF = \sqrt{\left(\frac{3}{2}\right)^2 + 3^2} = \sqrt{\frac{9}{4} + 9} = \sqrt{\frac{45}{4}} = \frac{3\sqrt{5}}{2}$
 $\hat{E}_1 = \hat{E}_2 \rightarrow \hat{DCE} \sim \hat{MEB} \rightarrow \frac{CE}{ED} = \frac{EB}{AE} \rightarrow \frac{y}{1-y} = \frac{1+y}{1} \rightarrow y = \sqrt{5}$

$$S_{FEM} = \frac{1}{2} MF \times EM = \frac{1}{2} \times \frac{3\sqrt{5}}{2} \times \sqrt{5} = \frac{15}{2} \sqrt{5}$$



BE = DC، DAE = ACD
 $\alpha = \alpha \rightarrow \hat{CAE} \sim \hat{ADE} \rightarrow \frac{AE}{ED} = \frac{CE}{AE} \rightarrow \frac{\sqrt{n^2+121}}{1} = \frac{n+10}{\sqrt{n^2+121}}$
 $n^2 + 121 = 10n + 100$
 $n^2 - 10n + 21 = 0$
 $(n-3)(n-7) = 0$
 $n = 3 \text{ یا } n = 7$



$$EF^2 = DF \times CF \rightarrow 14 = 1 \times CF$$

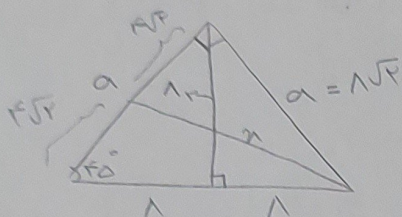
$$CF = 14$$

$$n^2 = CF \times AC \rightarrow n^2 = 14 \times 20$$

$$n = \sqrt{14 \times 20} = 14\sqrt{2}$$

9

9



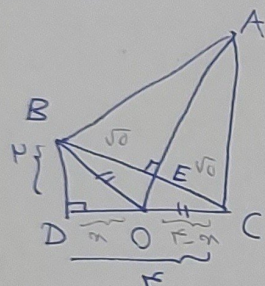
$$14^2 = 14^2$$

$$a^2 = 14 \times 14 \quad a = 14 \times \sqrt{2} = 14\sqrt{2}$$

$$n^2 = \sqrt{(14\sqrt{2})^2 + (14\sqrt{2})^2} = \sqrt{14^2} = 14\sqrt{2}$$

5

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$$BC = \sqrt{14^2 + 14^2} = 14\sqrt{2}$$

$$BO = \sqrt{14^2 + 14^2} = 14\sqrt{2} \quad S_{ABE}$$

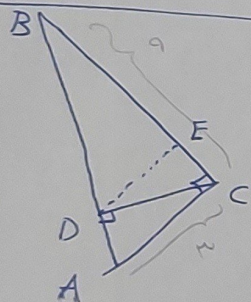
$$(14\sqrt{2})^2 = 14^2 + n^2 \quad n^2 = 14^2 + 14^2 = n^2 + 14 \quad n = \frac{14}{2}$$

$$BO = 14 - n = 14 - \frac{14}{2} = \frac{14}{2}$$

$$OE = \frac{14}{2} \quad OE = \frac{14}{2}$$

$$AO \times OE = OC^2 \quad AO \times \frac{14}{2} = \left(\frac{14}{2}\right)^2 \quad AO \times \frac{14}{2} = \frac{14^2}{2} \quad AO = \frac{14^2}{14} = \frac{14}{2}$$

$$S_{ABC} = \frac{1}{2} \times 14 \times \left(\frac{14}{2} - \frac{14}{2}\right) = \frac{14}{2}$$



$$(\hat{C} = 90^\circ) \Rightarrow BE \perp BC \perp DE, BC = 14, AC = 20$$

$$BC^2 = BD \times AB \rightarrow 14^2 = BD \times 20 \quad BD = \frac{14^2}{20} = \frac{14}{2}$$

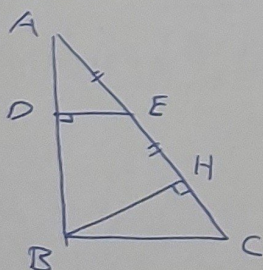
$$BD^2 = BE \times BC \rightarrow \left(\frac{14}{2}\right)^2 = BE \times 14$$

$$BE = \frac{14 \times 14}{14 \times 2} = \frac{14}{2}$$

9

9

$$DE \parallel BC \Rightarrow \hat{A} = \hat{A} \quad \hat{H} = \hat{D} \quad \hat{A} = \hat{A} \quad \hat{H} = \hat{D} \quad \hat{A} = \hat{A} \quad \hat{H} = \hat{D}$$



$$AC = 20$$

$$BH \times AC = AB \times BC \rightarrow BH \times 20 = 14 \times 14 \rightarrow BH = \frac{14 \times 14}{20} = \frac{14}{2}$$

$$AH = \sqrt{14^2 - 9.8^2} = 14.1$$

$$AE = 9.8$$

$$\hat{A} = \hat{A} \quad \hat{H} = \hat{D} \quad \hat{A} = \hat{A} \quad \hat{H} = \hat{D}$$

$$\frac{DE}{BH} = \frac{AE}{AB}$$

$$\frac{DE}{\frac{14}{2}} = \frac{9.8}{14} \rightarrow DE = \frac{14 \times 9.8}{14} = 9.8$$

1