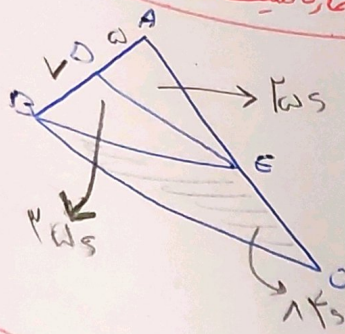


شماره تلفن: ۲۲

محقق: یازدهم دختر C

کدام خانوادگی: سائز فاتی ۲۵

سوال ۱



$BC \parallel DE$

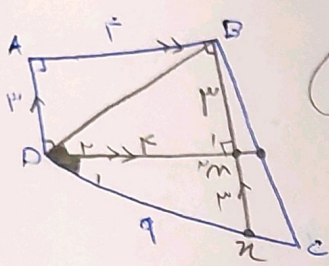
$$\frac{S_{\triangle BCE}}{S_{\triangle BDE}} = ? \Rightarrow \frac{145}{95} = \frac{12}{5} = 2.4$$

$$V S_{\triangle ADE} = \omega S_{\triangle BDE} \quad (\text{به نسبت قاعده تقسیم شود})$$

$$\frac{S_{\triangle ADE}}{S_{\triangle ABC}} = \left(\frac{\omega}{12}\right)^2 = \frac{405}{1445}$$

۵

سوال ۲



$\hat{BDC} = 2 \hat{BDM}$

$$\hat{D}_1 = \hat{D}_2$$

مستقيم

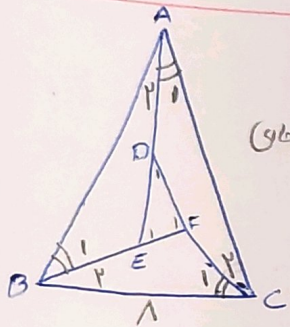
$$\hat{m}_1 = \hat{m}_2 = 90^\circ$$

$$\Delta DMB \sim \Delta DMN \Rightarrow \frac{DM}{DN} = \frac{3}{5}$$

$$\Rightarrow \text{در } M \Rightarrow \text{نسبت } \Rightarrow 9 - 5 = 4 \Rightarrow \frac{4}{5} \rightarrow 2$$

۵

سوال ۳



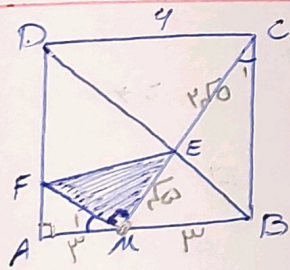
$\hat{ABF} = \hat{CAE} = \hat{BCD}$, $EF = 3$, $DF = 2.5$, $AB = ?$

$$\hat{D}_1 = \hat{A}_1 + \hat{C}_2 \Rightarrow \hat{D}_1 = \hat{C} \Rightarrow \hat{F}_1 = \hat{B} \Rightarrow \hat{E} = \hat{A} \Rightarrow \Delta DEF \sim \Delta CBA$$

$$\rightarrow \left(\frac{EF}{BA}\right) = \left(\frac{FD}{CB}\right) = \frac{EP}{CA} \Rightarrow \frac{3}{BA} = \frac{2.5}{1} \Rightarrow BA = \frac{3}{2.5} = 1.2$$

۵

سوال ۴



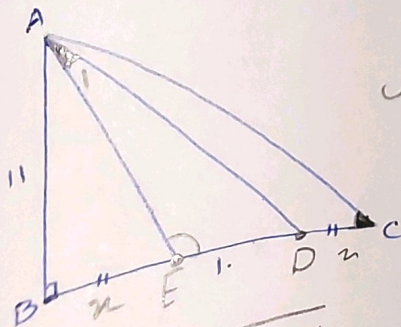
M: AB وسطا, $\hat{BCE} = \hat{AMF}$, $MC = 3\sqrt{5} \rightarrow \Delta DCE \sim \Delta MEB \rightarrow \frac{ME}{EC} = k = \frac{1}{2} \Rightarrow ME = \sqrt{5}$

$$\hat{M} = \hat{C}_1 \Rightarrow \hat{A} = \hat{B} \Rightarrow \Delta FAM \sim \Delta BMC \rightarrow \frac{MF}{MC} = k' = \frac{1}{2} \rightarrow FM = \frac{3\sqrt{5}}{2}$$

$$\Rightarrow S_{\triangle FME} = FM \times ME \times \frac{1}{2} = \frac{3\sqrt{5}}{2} \times \sqrt{5} \times \frac{1}{2} = \frac{15}{2} = 7.5$$

$$\hat{PAE} = \hat{ACD}, BE = DC, DC = ? = n = 3 \angle V$$

سوال ۵



$$\hat{E}_1 = \hat{C} \Rightarrow \Delta AED \sim \Delta ACE \rightarrow \left(\frac{DE}{EA}\right) = \left(\frac{EA}{EC}\right) = \frac{DA}{AC}$$

$$\Rightarrow \frac{10}{\sqrt{11^2 + n^2}} = \frac{\sqrt{11^2 + n^2}}{n + 10} \Rightarrow 11^2 + n^2 = 10n + 100$$

$$\Rightarrow n^2 - 10n + 11 = 0 \rightarrow (n-3)(n-7) = 0 \rightarrow n = 3 \angle V$$

AE $\rightarrow \sqrt{11^2 + n^2}$

$$\hat{AFC} = \hat{CED} = 90^\circ \quad AD=3 \text{ و } EF=4 \text{ و } DF=1 \text{ و } BC=?$$

$$CF \times PF = (FE)^2 \rightarrow FC = 14$$

$$AF \times CF = (FB)^2 \rightarrow FB = 8 \Rightarrow BE = 6$$

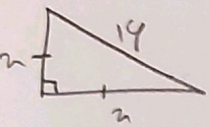
$$\text{فیباقوسی } \triangle FCB \rightarrow \sqrt{8^2 + 14^2} = 16 \text{ (س)} \quad (5)$$

انوارزه مابین دو نقطه
مستطیل = 14

لطف قاعده = انوارزه مابین دو نقطه
مستطیل

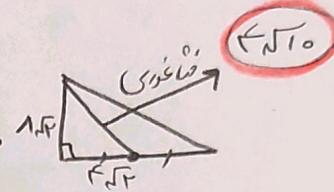
انوارزه مابین دو نقطه
مستطیل = ?

مستطیل قائم الزامی است



$$2n^2 = 14^2 \rightarrow n = \frac{14\sqrt{2}}{2} = 7\sqrt{2}$$

صیانه وار
مستطیل

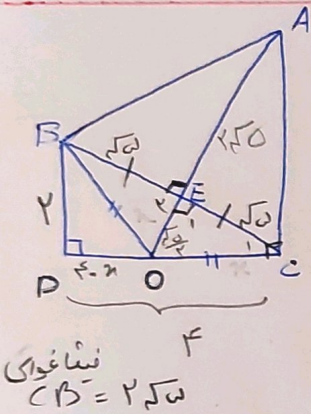


$$BD=2, CD=4, \hat{ACD}=90^\circ \quad S_{\triangle ABE}=?$$

$$\left. \begin{array}{l} \overline{CO} = \overline{BO} \\ \hat{E}_1 = \hat{E}_2 = 90^\circ \\ OE \text{ مشترک} \end{array} \right\} \rightarrow \triangle OEB \cong \triangle OEC \Rightarrow CE = BE = \sqrt{5}$$

$$\left. \begin{array}{l} \hat{E}_1 = \hat{D} = 90^\circ \\ OE \text{ مشترک} \end{array} \right\} \rightarrow \triangle OEC \sim \triangle ODB \xrightarrow{K=\frac{1}{2}} OE = \frac{\sqrt{5}}{2}$$

$$CE^2 = OE \cdot AE \rightarrow 5 = \frac{\sqrt{5}}{2} \times EA \rightarrow EA = 2\sqrt{5} \Rightarrow S_{\triangle ABE} = \frac{\sqrt{5} \times 2\sqrt{5}}{2} = 5 \quad (5)$$

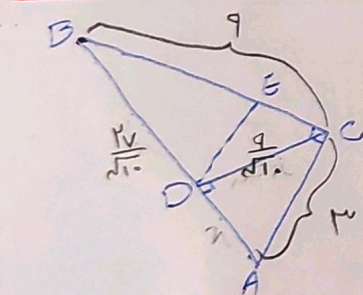


$$AC=3, BC=9, DE \perp BC, \hat{C}=90^\circ, BE=?$$

$$\text{فیباقوسی } AB = 3\sqrt{10} \rightarrow 3\sqrt{10} \times DC = 3 \times 9 \rightarrow DC = \frac{9}{\sqrt{10}}$$

$$\text{ی دالیم } CE \times CB = (DC)^2 \rightarrow CE \times 9 = \frac{81}{10} \rightarrow CE = 0.9 \quad (5)$$

$$\Rightarrow BE = 1.1 \quad (5)$$



$$AB=12, BC=12, \hat{ABC}=90^\circ, DE=?$$

$$\left. \begin{array}{l} \hat{A} = \hat{D} = 90^\circ \\ \hat{P} = \hat{B} \end{array} \right\} \rightarrow \triangle PEA \sim \triangle ABC \rightarrow \frac{AD}{PE} = \frac{4}{3}$$

$$\text{فیباقوسی } \triangle ABC \rightarrow \hat{A} = 40^\circ \Rightarrow 20 \times BH = 12 \times 12 \rightarrow 9.6 = BH$$

$$\text{فیباقوسی } \triangle BHA \rightarrow HA = 12 \sin 40^\circ \Rightarrow AE = 9.6$$

$$3n = 9.6 \rightarrow n = 3.2 \Rightarrow DE = 3n = 9.6 \quad (5)$$

