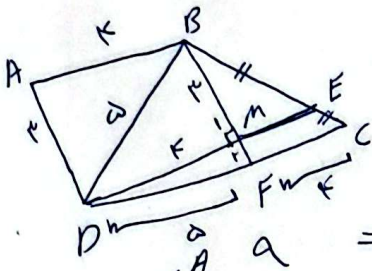
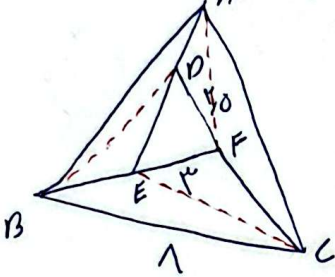


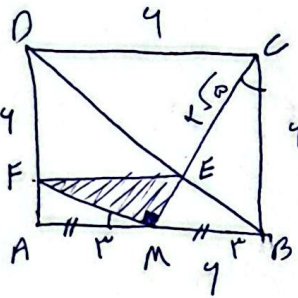
$DE \parallel BC \Rightarrow \triangle ADE \sim \triangle ABC \quad k = \frac{a}{a+v} = \frac{a}{12}$ -1
 $S_{BEC} = \frac{EN \times BC}{2} \quad S_{DEB} = \frac{EN \times DE}{2} \quad \frac{S_2}{S_1} = \frac{12}{a}$



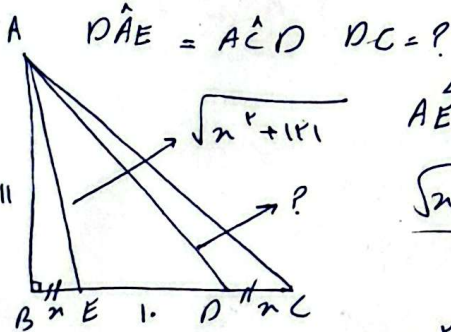
$DM \parallel AB \quad BM \parallel AD \Rightarrow$ مستطیل $S_{BCD} = 2 S_{DBM}$ -2
 $\triangle DBM \cong \triangle DMF \quad \begin{cases} m_1 = m_2 = 90^\circ \\ DM \perp AC \Rightarrow \hat{D}_1 = \hat{D}_2 \end{cases}$
 $\Rightarrow MB = MF = 4$
 $\triangle ABC \sim \triangle DEF \quad \boxed{n=2} \Rightarrow \frac{12}{9} = \frac{x}{4}$



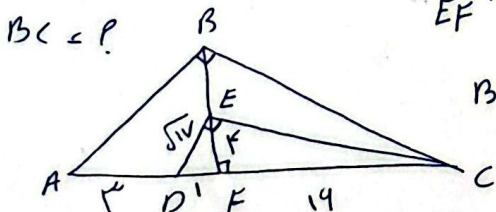
$k = \frac{12a}{a} = \frac{12}{x} \Rightarrow x = 24$ -3



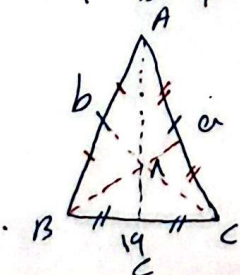
$\triangle BCE = \triangle AMF \quad CD \parallel AB \Rightarrow$
 $\triangle CDE \sim \triangle EMB : \frac{CE}{ME} = \frac{CD}{MB} = \frac{CE}{ME} = 2$ -4
 $CE = 2ME$
 $CM = CE + EM = 3ME$
 منقول : $CM^2 = CB^2 + BM^2 \Rightarrow 9ME^2 = 16 + 9$
 $CE = 2\sqrt{5}, \frac{CB}{MF} = \frac{CE}{MA} \Rightarrow ME = \sqrt{5}$



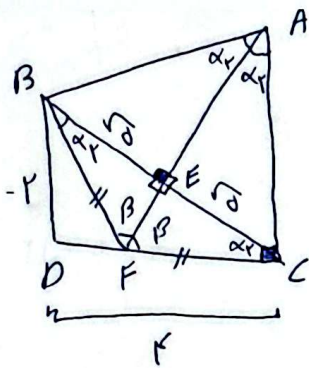
$\triangle ADE = \triangle ACD \quad DC = ?$
 $\triangle AED \sim \triangle AEC$
 $\frac{\sqrt{2^2+1^2}}{1+n} = \frac{1}{\sqrt{2^2+1^2}} = 2^2 - 10n + 1 = 0$
 $n = 2, v$



$EF^2 = PF \times FC \Rightarrow 14 = 1 \times FC \quad FC = 14$
 $BC^2 = CF \times CA \Rightarrow BC^2 = 14 \times 2 = (1\sqrt{2})^2$ -5
 $BC = 1\sqrt{2}$



$AC = \sqrt{1^2+1^2} = 1\sqrt{2} \quad m_a = \frac{1}{2} \sqrt{1^2+1^2} = \frac{1}{2}$
 $a = 1\sqrt{2} \quad b = 1\sqrt{2} \quad m = \frac{1}{2}$ -6
 $c = 14$



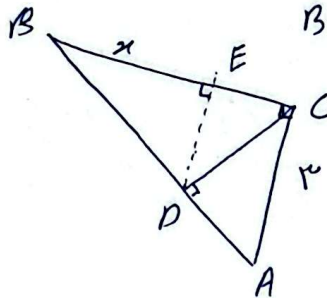
$$\triangle ABE = ? \quad (\angle AF \hat{=} \angle \omega) \rightarrow BF = CF$$

-1

$$\triangle FEB \hat{=} \triangle FEC \quad BC^2 = 14^2 + 15^2 \Rightarrow BC = 17$$

$$\tan \alpha = \frac{\sin}{\cos} = \frac{15}{14} \Rightarrow AE = 15$$

$$S = \frac{15 \times 15}{2} = a$$



$$BC = a \Rightarrow BA^2 = a + 11 \Rightarrow BA = 15$$

$$CA^2 = AD \times AB = a = AD \times 15$$

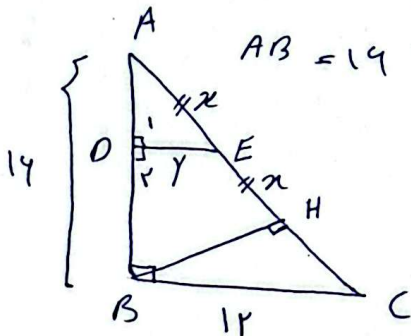
$$AD = \frac{15}{51}$$

$$CD = \sqrt{a - \frac{a}{15}} = \sqrt{11} = \frac{a}{15}$$

$$\frac{a}{15} = CE \times \frac{a}{15} \Rightarrow CE = \frac{a}{15}$$

$$BC - CE = BE \Rightarrow a - \frac{a}{15} = \boxed{11}$$

-9



$$AB = 14 \quad BC = 17$$

$$AC^2 = AB^2 + BC^2 \Rightarrow AC^2 = 14^2 + 17^2$$

$$AC = 15$$

$$BC^2 = CH \times CA = 17^2 = CH \times 15$$

$$CH = \frac{17^2}{15}$$

$$\frac{AC - CH}{15} = AE = EH = \frac{17}{15}$$

$$\triangle ADE \sim \triangle ABC \quad \left\{ \begin{array}{l} \hat{D} = \hat{B} = 90^\circ \\ \hat{A} = \hat{A} \end{array} \right.$$

$$\Rightarrow \frac{BC}{DE} = \frac{AC}{AE} \Rightarrow DE = \frac{17}{15}$$

-10