

نام و نام خانوادگی تاریخ پاسخنامه تشریحی تکلیف شماره ... کلاس A

$$\frac{BC}{AE} = \frac{1}{x} = 1, \frac{FC}{FA} = x, FC = x, FB = 1-x$$

$$\Rightarrow AB^2 = BE^2 + AE^2 + AB^2 \Rightarrow BE^2 = x^2 + (1-x)^2 \Rightarrow BE^2 = 1 \Rightarrow BE = 1$$

$$A \times E \times D \Rightarrow AC^2 = AE^2 + CD^2 + AD^2 \Rightarrow AC^2 = (1-x)^2 + (1-x)^2 = AC^2 = 1 \Rightarrow AC = 1$$

$$\hookrightarrow \triangle AEF, \triangle BFC \Rightarrow \begin{cases} F_1 = F_2 \\ C_1 = A_1 \end{cases} \hookrightarrow \frac{EF}{AF} = \frac{1}{x} = \frac{1}{1-x} = \frac{BE}{AC} = \frac{1}{1-x} \Rightarrow \frac{1}{x} = \frac{1}{1-x}$$

$$\rightarrow \triangle AED, \triangle ACB \Rightarrow \frac{AE}{AC} = \frac{AD}{AB} = \frac{ED}{CB} \Rightarrow \frac{x}{1} = \frac{x}{1} = \frac{ED}{1} \Rightarrow ED = x$$

$$\Rightarrow x^2 + x^2 = 1 \Rightarrow x^2 = \frac{1}{2} \Rightarrow x = \frac{1}{\sqrt{2}}$$

$$DE \parallel BC \Rightarrow \frac{DE}{BC} = \frac{AE}{AC} = \frac{1-x}{1} = 1-x$$

$$\Rightarrow 1-x = x \Rightarrow x = \frac{1}{2}$$

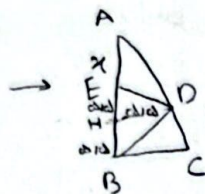
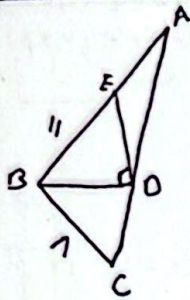
$$AB^2 = BH \times BC, AC^2 = CH \times BC$$

$$\hookrightarrow \frac{AB^2}{AC^2} = \frac{BH}{CH} = \frac{1}{1} \Rightarrow \frac{AB}{AC} = 1 \Rightarrow AB = AC$$

$$\Rightarrow \triangle AEF, \triangle CEF \Rightarrow \frac{AE}{CE} = \frac{AF}{CF} = \frac{EF}{EF}$$

$$\hookrightarrow \frac{1}{1} = \frac{x}{1} = \frac{EF}{EF} \Rightarrow EF = 1$$

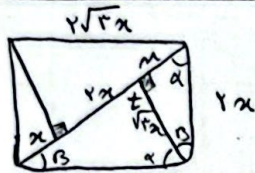
$$\Rightarrow x^2 + x^2 = 1 \Rightarrow x^2 = \frac{1}{2} \Rightarrow x = \frac{1}{\sqrt{2}}$$



$$\frac{AH}{AB} = \frac{DH}{BC} \Rightarrow \frac{a/d + x}{11 + x} = \frac{a/d}{1}$$

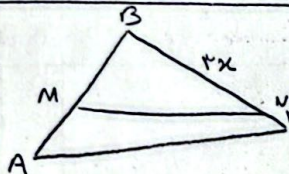
$$\Rightarrow 11x + 11x = 101d + 11d \rightarrow 11x = 111d$$

$$\Rightarrow x = \frac{111d}{11} = 10.1$$



$$\tan B = \frac{x}{t} = \frac{t}{\sqrt{x}} \Rightarrow t = \sqrt{x}$$

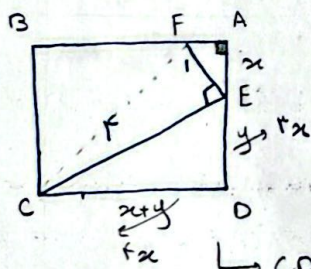
$$\frac{S_{\text{triangle}}}{S_{\text{square}}} = \frac{1 \times x + 1 \times \sqrt{x}}{\frac{\sqrt{x} \times x}{1}} = 1$$



$$S_{ABC} = 1 \times S_{BMN} \rightarrow \frac{1}{2} BN \times BM \times \sin B$$

$$\Rightarrow \frac{1}{2} BC \times AB \times \sin B = 1 \times \frac{1}{2} BN \times BM \times \sin B$$

$$\hookrightarrow a \times x \times AB = 1 \times (1-x) \times BM \Rightarrow \frac{BM}{AB} = \frac{a}{1} \Rightarrow \frac{BM}{AB-BM} = \frac{a}{1-a} = \frac{a}{1} = 1, 1a$$

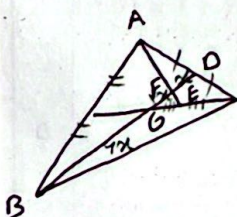


$$AEF \sim CDE$$

$$\hookrightarrow \frac{f}{1} = \frac{x+y}{x} \Rightarrow 1x = y$$

$$\hookrightarrow CDE \Rightarrow ax = f \rightarrow x = 0.1$$

$$\rightarrow AD = f(0.1) = 1, 1 \Rightarrow S_{\text{area}} = (1, 1)^2 = 1, 1$$



$$GD, AE (1) \Rightarrow \text{مربع } F \Rightarrow FD = x$$

$$BG = 4x$$

$$BD = 9x$$

$$\Rightarrow \frac{BD}{FD} = \frac{9x}{x} = 9$$