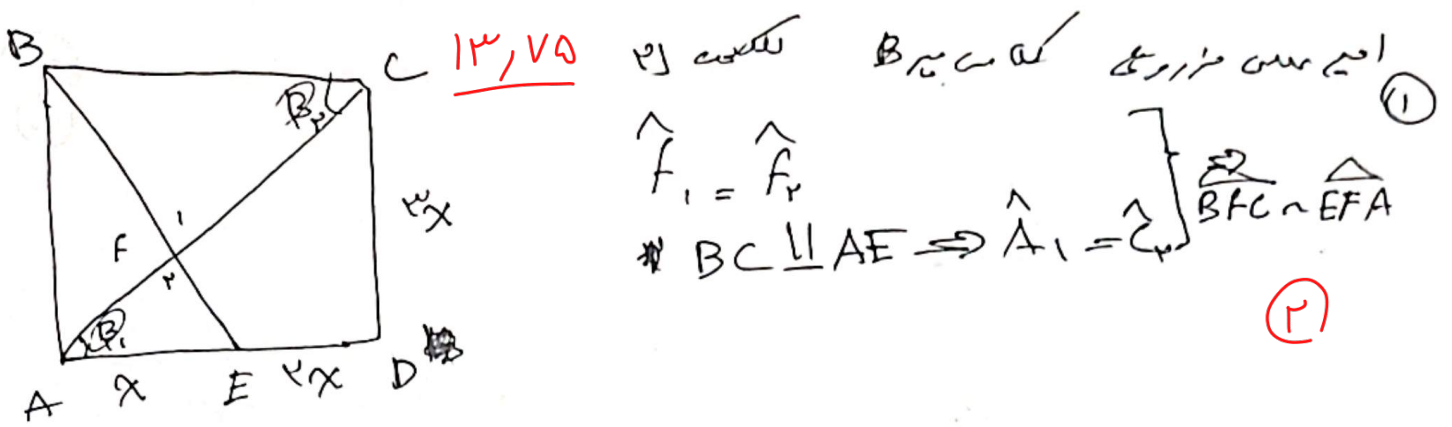


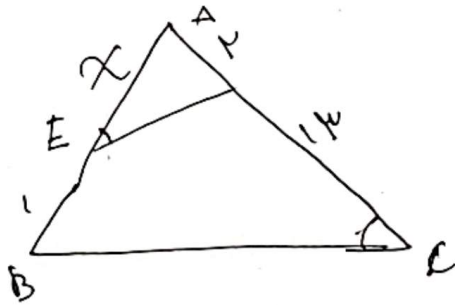


$$\frac{BC}{AE} = \frac{BF}{EF} = \frac{CF}{AF} = \frac{1}{\sqrt{2}}$$

$$\frac{BF}{EF} = \frac{CF}{AF} \Rightarrow \frac{BE}{EF} = \frac{CA}{AF} \Rightarrow \frac{BE}{CA} = \frac{EF}{AF}$$

$$AC = \sqrt{2} \cdot x \quad BE = \sqrt{2} \cdot x \Rightarrow \frac{EF}{AF} = \frac{\sqrt{2} \cdot x}{\sqrt{2} \cdot x} = 1$$

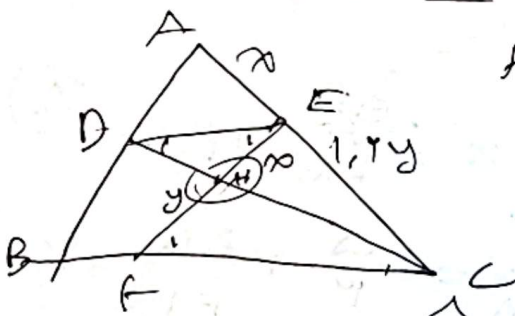
$$\frac{\sqrt{2}}{1} \checkmark$$



$$\hat{A} = \hat{A} \quad \hat{E} = \hat{C} \Rightarrow \triangle AED \sim \triangle ACB$$

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

$$x = 1 \checkmark$$



$$FC \parallel DE \Rightarrow \hat{F}_1 = \hat{E}_1, \hat{D}_1 = \hat{C}_1$$

$$\triangle FHC \sim \triangle EHD$$

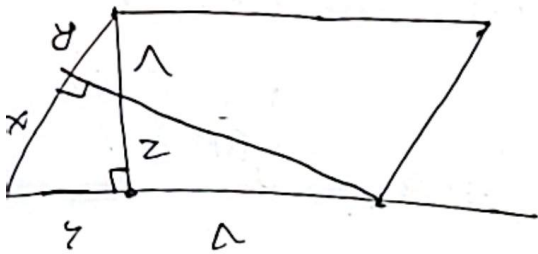
$$\frac{x}{y} = \frac{DE}{FC} = \frac{1}{2} \Rightarrow x = \frac{1}{2}y$$

$$ED \parallel BC \Rightarrow \triangle AED \sim \triangle ABC$$

$$\frac{FC}{BC} = \frac{1}{2} \Rightarrow \frac{1}{2} = \frac{1}{2} \Rightarrow BC = \frac{1}{2} \cdot \frac{1}{1} = \frac{1}{2}$$

$$\frac{x}{x+y} = \frac{x}{1+y} = \frac{ED}{BC} \Rightarrow \frac{x}{y} = \frac{DE}{FC}$$

$$\frac{1}{2} \checkmark$$

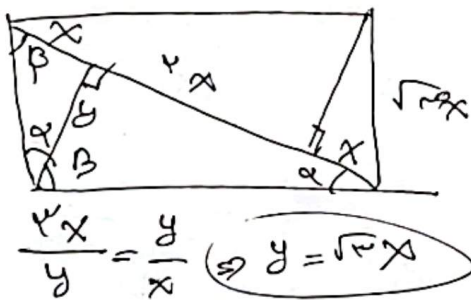


(2)



$$\frac{1}{2} = \frac{1+2}{4} \Rightarrow 1 = 1+2 \Rightarrow 2 = 1$$

$$1+2 = 1+1 = (1) \checkmark$$



(2)



$$(1 \times 1) + (1 \times 1) = 1 \times 1 \Rightarrow 1 \times 1$$

$$\sqrt{1} \times \sqrt{1} = 1 \times 1 = 1$$

$$1 \times \sqrt{1} = \sqrt{1} \times 1 = 1$$



(1, 1)

(1)

$$S = \frac{1}{2} \sin \theta \times a \times b$$

$$\Rightarrow \frac{S_1}{S_2} = \frac{\frac{1}{2} \sin \theta \times \frac{1}{2} \times AB}{\frac{1}{2} \sin \theta \times \frac{1}{2} \times BM} = \frac{1}{2} \times \frac{AB}{BM} = 1$$

$$\Rightarrow \frac{BM}{AB} = \frac{1}{2}$$

$$= \frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

$$\boxed{\frac{1}{4}}$$

$$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$$

