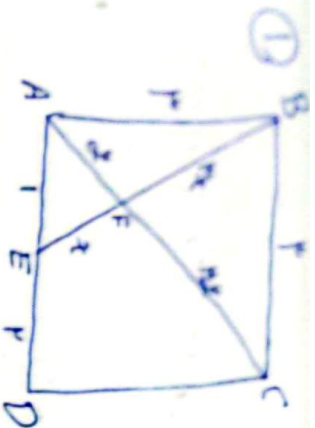


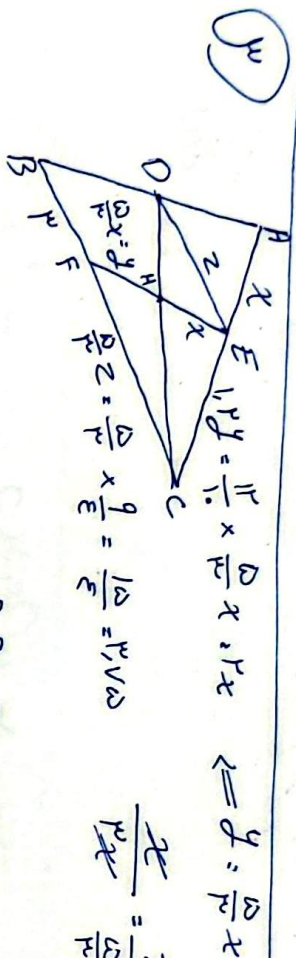


$$\begin{aligned} \triangle BEF \sim \triangle BAC &\Rightarrow \frac{EF}{BC} = \frac{BE}{BA} \\ \frac{x}{1} &= \frac{\frac{\sqrt{2}}{2}}{1} \Rightarrow x = \frac{\sqrt{2}}{2} \end{aligned}$$

50 (3/10/2011)

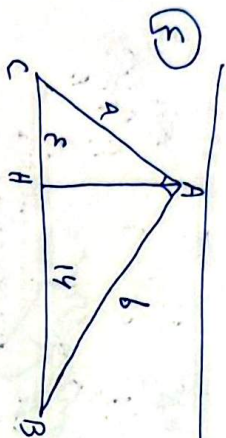
$$\triangle AED \sim \triangle BEC \Rightarrow \frac{AE}{BE} = \frac{ED}{EC} = \frac{AD}{BC} = 1$$

$$\begin{aligned} \frac{AE}{BE} &= \frac{ED}{EC} = 1 \Rightarrow AE = BE, ED = EC \\ \angle AED &= \angle BEC = 90^\circ \end{aligned}$$

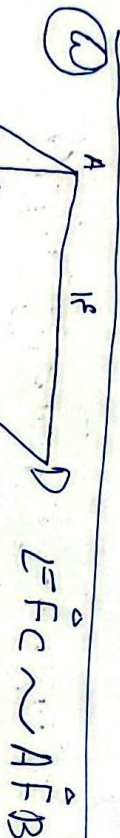


$$\frac{x}{1} = \frac{1}{2} \Rightarrow x = \frac{1}{2}$$

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

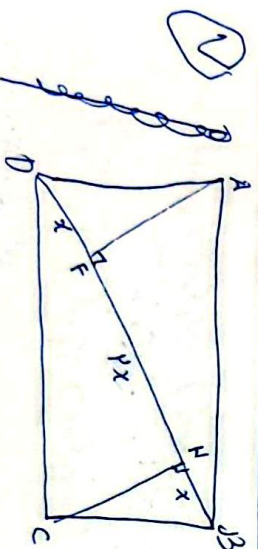
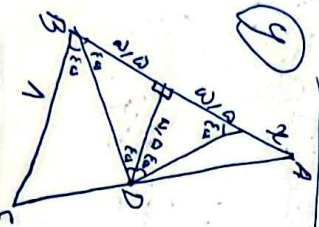


$$\frac{EF}{BC} = \frac{AE}{AB} \Rightarrow \frac{x}{1} = \frac{1}{2} \Rightarrow x = \frac{1}{2}$$



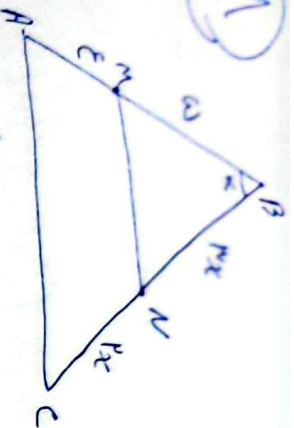
$$\frac{x}{1} = \frac{1}{2} \Rightarrow x = \frac{1}{2}$$

$$\frac{x + \omega/\omega}{\omega/\omega} = \frac{\omega/\omega}{1/\omega} \Rightarrow x = \frac{\omega}{1}$$



$$\frac{S_{ABC}}{S_{BCE}} = \frac{1}{x} \Rightarrow \frac{S_{ABC}}{S_{BCE}} = \frac{1}{x} \Rightarrow x = \frac{1}{2}$$

①



$$\frac{BN}{NC} = \frac{y}{w}$$

$$S_{ABC} = \frac{1}{2} S_{BMN}$$

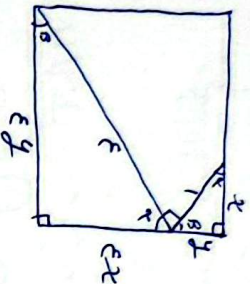
$$\rightarrow \frac{1}{2} \times AB \times AC \sin \alpha = \frac{1}{2} \times \frac{1}{2} \times BM \times MN \sin \alpha$$

$$\frac{AB}{BM} = \frac{AC}{MN} \Rightarrow$$

$$\frac{BM}{AM} = \frac{MN}{CN}$$

$$\frac{BM}{AM} = \frac{y}{x}$$

②



$$x^2 + y^2 = 1 \rightarrow x^2 + y^2 = 1 \rightarrow y = \sqrt{1 - x^2}$$

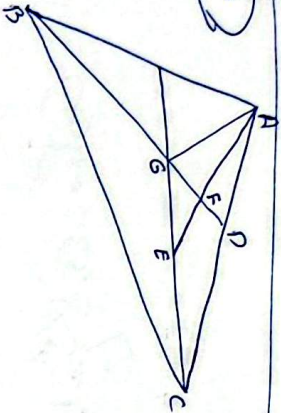
$$S = \frac{1}{2} xy = \frac{1}{2} x \sqrt{1 - x^2}$$

$$S = \frac{1}{2} xy = \frac{1}{2} x \sqrt{1 - x^2}$$

③

$$y = \sqrt{1 - x^2}$$

③



$$GB = \frac{1}{2} BD$$

$$FD = \frac{1}{2} GD \rightarrow FD = \frac{1}{2} \times \frac{1}{2} BD$$

$$\rightarrow 9FD = BD \rightarrow \frac{BD}{FD} = 9$$

④