

$$\overline{CA} = l$$

SM // HC

$$\overline{BM} = \sqrt{l^2 + \frac{1}{4}l^2} = \frac{\sqrt{5}}{2}l$$

$$\overline{BE} = \sqrt{2}l$$

$$\overline{EM} = \sqrt{(\sqrt{2})^2 + (\frac{1}{2})^2} = \frac{3}{2}l$$

$$\frac{9}{4}l^2 = 2l^2 + \frac{5}{4}l^2 - \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{5}}{2} l^2 \cos x$$

$$\cos x = \frac{1}{\sqrt{10}} \quad x = \arccos \frac{1}{\sqrt{10}} \Rightarrow \sin x = \sqrt{1 - \cos^2 x}$$

$$\sin x = \sqrt{1 - \frac{1}{10}}$$

$$A = \frac{1}{2} \overline{EB} \cdot \overline{BM} \cdot \sin x = \sin x = \frac{3}{\sqrt{10}}$$

$$A = \frac{1}{2} \cdot \sqrt{2}l \cdot \frac{\sqrt{5}}{2}l \cdot \frac{3}{\sqrt{10}} \Rightarrow A = \frac{3}{4}l^2$$

$$\overline{SM} = \sqrt{\overline{SG}^2 + \overline{MG}^2} \Rightarrow \overline{SM} = \sqrt{\frac{l^2}{4} + \frac{l^2}{4}} = \frac{\sqrt{2}l}{2}$$

$$\overline{BS} = \sqrt{\overline{SF}^2 + \overline{FB}^2} = \sqrt{\frac{5}{4}l^2 + l^2} = \frac{3}{2}l$$

$$\overline{SB}^2 = \overline{BM}^2 + \overline{MS}^2 - 2 \overline{BM} \cdot \overline{MS} \cos \widehat{BMS}$$

$$\frac{9}{4}l^2 = \frac{5}{4}l^2 + \frac{l^2}{2} - 2 \cdot \frac{\sqrt{5}}{2}l \cdot \frac{l}{\sqrt{2}} \cdot \cos \widehat{BMS}$$

$$9l^2 = 5l^2 + 2l^2 - 2\sqrt{10}l^2 \cdot \cos \widehat{BMS}$$

$$1 \cancel{l^2} = -\cancel{2}\sqrt{10} \cancel{l^2} \cdot \cos \widehat{BMS}$$

$$\frac{1}{\sqrt{10}} = \cos \widehat{BMS}$$

$$\overline{ER} = \overline{RG}$$

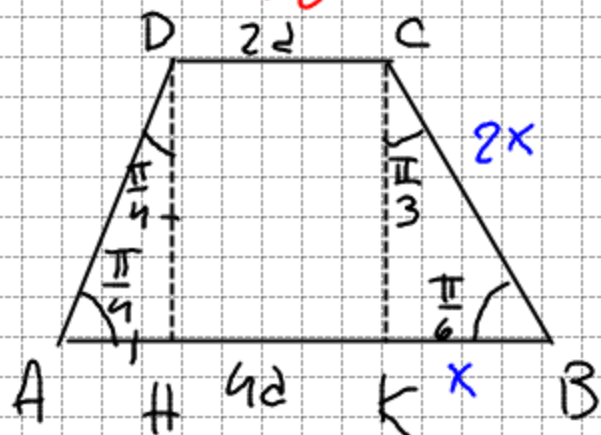
$$\overline{ER}^2 = \overline{EG}^2 + \overline{RG}^2 - 2 \overline{EG} \cdot \overline{RG} \cdot \cos \widehat{RGE}$$

$$\frac{5}{4}l^2 = 2l^2 + \frac{5}{4}l^2 - 2 \cdot \frac{\sqrt{10}}{2}l^2 \cdot \cos \widehat{RGE}$$

$$-2l^2 = -\sqrt{10}l^2 \cdot \cos \widehat{RGE}$$

$$\frac{2}{\sqrt{10}} = \cos \widehat{RGE}$$

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DATI

$$\hat{DAB} = \frac{\pi}{4}$$

$$\hat{CBA} = \frac{\pi}{6}$$

RICHIEDUTA
DA e CB

$$AB = 2DC \Rightarrow DC = 2d$$

$$AB = 4d$$

$$DH = AH$$

$$BK = \frac{CB}{2}$$

$$AH + KB = 2d$$

$$KB = x$$

$$AH = 2d - x \Rightarrow 2d - \frac{2d}{\sqrt{3}+1} \Rightarrow \frac{2d\sqrt{3}}{\sqrt{3}+1}$$

$$CK = \sqrt{3}x \Rightarrow CK^2 = CB^2 - KB^2$$

$$\sqrt{3}x = 2d - x$$

$$\sqrt{3}x + x = 2d$$

$$x(\sqrt{3}+1) = 2d$$

$$x = \frac{2d}{\sqrt{3}+1}$$

$$CB = \frac{2d}{\frac{\cos \frac{\pi}{6}}{2}} = \frac{2d}{\frac{\frac{\sqrt{3}}{2}}{2}} = \frac{4d}{\sqrt{3}}$$

$$DA = \frac{AH}{\cos \frac{\pi}{4}} \Rightarrow DA = \frac{2d\sqrt{3}}{\sqrt{3}+1} \cdot \frac{2}{\sqrt{2}} = \frac{4d\sqrt{3}}{\sqrt{6}+\sqrt{2}}$$