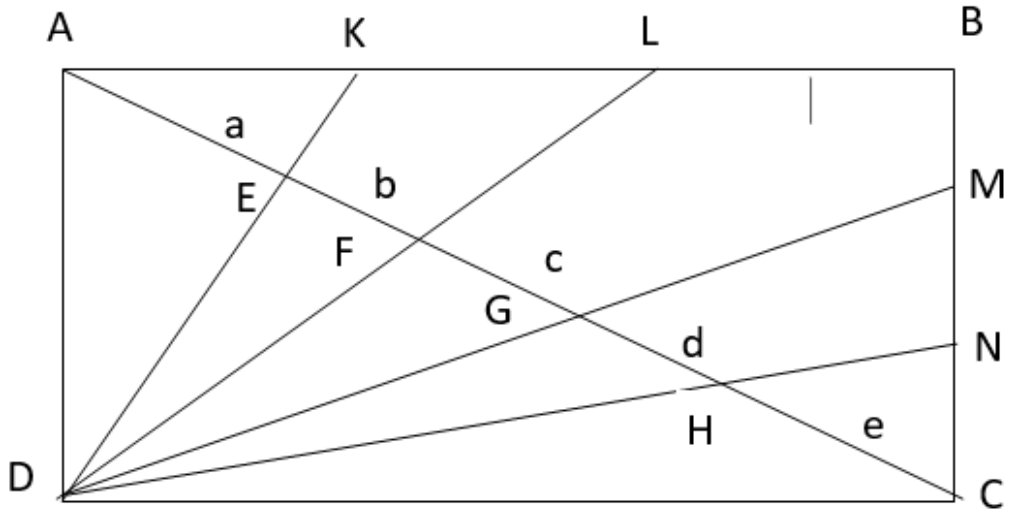
בס"ד

פתרון בעיית אתגר מס' 2



$$\Delta AEK \sim \Delta CED$$

$$\frac{AE}{EC} = \frac{AK}{DC} = \frac{2}{6} = \frac{1}{3} \rightarrow EC = 3AE, AC = 4a$$

$$\Delta AFL \sim \Delta CFD$$

$$\frac{AF}{FC} = \frac{AL}{DC} = \frac{4}{6} = \frac{2}{3} \Rightarrow AF = \frac{2}{3}FC$$

$$AC = AF + FC = \frac{2}{3}FC + FC = \frac{5}{3}FC$$

$$4a = \frac{5}{3}FC \Rightarrow FC = \frac{12}{5}a$$

$$AF = \frac{2}{3}FC = \frac{2}{3} \cdot \frac{12}{5}a = \frac{8}{5}a$$

$$b = EF = AF - AE = \frac{8}{5}a - a = \frac{3}{5}a \Rightarrow$$

$$\frac{a}{b} = \frac{5}{3} \quad \Rightarrow a:b = 5:3$$

$$\Delta NHC \sim \Delta DHA, \Delta MGC \sim \Delta DGA$$

$$\frac{CH}{AH}=\frac{NC}{DA}=\frac{1}{3}\rightarrow AH=3HC, AC=4e\Rightarrow a=e,\qquad d=\frac{3}{5}e$$

$$\boxed{\frac{e}{d}=\frac{5}{3}\qquad \Rightarrow e:d=5:3}$$

$$c=FG=AC-a-b-d-e=4a-a-\frac{3}{5}a-\frac{3}{5}a-a=\frac{4}{5}a$$

a:b:c:d:e=5:3:4:3:5