

NCERT Solutions by Dev Anoop (Bathinda)

$$\text{ar}(\triangle ADE) = \frac{1}{2} \begin{vmatrix} 4 & 6 \\ \frac{13}{4} & \frac{23}{4} \\ \frac{19}{4} & 5 \\ 4 & 6 \end{vmatrix}$$

$$= \frac{1}{2} \left| 23 - \frac{39}{2} + \frac{65}{4} - \frac{437}{16} \right. \\ \left. + \frac{57}{2} - 20 \right|$$

$$= \frac{1}{2} \left| 3 + \frac{18}{2} + \frac{65}{4} - \frac{437}{16} \right|$$

$$= \frac{1}{2} \left| \frac{48 + 144 + 260 - 437}{16} \right|$$

$$= \frac{1}{2} \left| \frac{452 - 437}{16} \right|$$

$$\frac{1}{2} \times \frac{15}{16}$$

$$= \frac{15}{32} \text{ Sq units}$$

reqd ratio

$$\frac{15}{32} \div \frac{15}{2}$$

$$= \frac{15}{32} \times \frac{2}{15}$$

$$= \frac{1}{16}$$

$$= 1:16$$