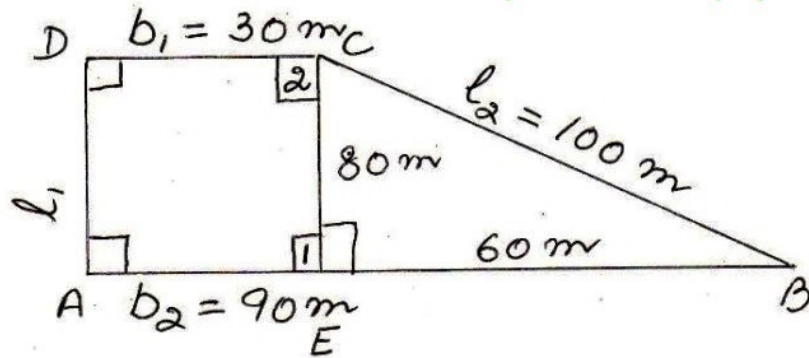


5



construction draw  $CE \perp AB$

Solution In  $\square AECD$

$$\begin{aligned} \angle C &= 360 - (\angle D + \angle A + \angle E) \\ &\quad \text{(angle sum prop. of } \square) \\ &= 360 - 270 \\ &= 90^\circ \end{aligned}$$

$\square AECD$  is a rectangle

$$AE = DC = 30 \text{ m} \quad \text{(opp. sides of a rectangle)}$$

$$\begin{aligned} BE &= AB - AE \\ &= 90 - 30 \\ &= 60 \text{ m} \end{aligned}$$

In rt  $\triangle CEB$

$$\begin{aligned} CE^2 &= BC^2 - BE^2 \quad \text{(Pythagoras theorem)} \\ &= 100^2 - 60^2 \\ &= (100 - 60)(100 + 60) \end{aligned}$$

$$\begin{aligned} CE &= \sqrt{40 \times 160} \\ &= \sqrt{40 \times 40 \times 2 \times 2} \\ &= 40 \times 2 \\ &= 80 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{ar (trapezium ABCD)} &= \frac{1}{2} (b_1 + b_2) \times h \\ &= \frac{1}{2} (30 + 90) \times 80 = 4800 \text{ m}^2 \end{aligned}$$

rate of ploughing  $1 \text{ m}^2 = \text{Rs } 4$

$$\begin{aligned} \text{cost of ploughing } 4800 \text{ m}^2 &= 4800 \times 4 \\ &= \text{Rs } 19200 \end{aligned}$$