

## CHAPTER 11

# Areas

### Example:

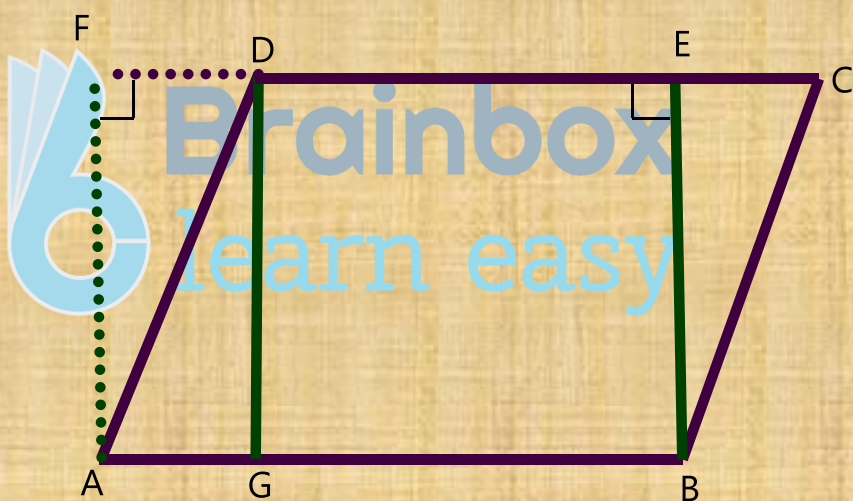
ABCD is a parallelogram and ABEF is a rectangle and DG is perpendicular on AB. Prove that

$$(i) \text{ ar (ABCD) = ar (ABEF) }$$

$$(ii) \text{ ar (ABCD) = AB x DG }$$

**Sol.**

**Proof:**



(i) We know that a rectangle is also parallelogram

$\Rightarrow$   $\square$  ABEF is a parallelogram

$\Rightarrow$  ABCD and ABEF are two parallelograms on the same base AB and between the same parallels AB and FC.

$$\Rightarrow \text{ ar (ABCD) = ar (ABEF) }$$

$$(ii) \text{ ar (ABCD) = ar (ABEF) } \quad (\because \text{ From (1) })$$

$$= AB \times BE \quad (\because ABEF \text{ is a rectangle})$$

$$= AB \times DG \quad (DG \perp AB \text{ and } DG = BE)$$

$$\therefore \text{ar}(ABCD) = AB \times DG$$

**Note:**

From the above result we can say that "area of a parallelogram is the product of its any side and the corresponding altitude".

