



Point A = top of the building.

Two observers are at point C and D. We have to find the distance CD which is 'x'. Angle of depressions are drawn at point A. Their alternate angles are at point C and D.

Now consider two right angled triangles i.e. $\triangle ABC$ and $\triangle ABD$.

$\triangle ABC$

$$\tan (54^{\circ}) = 60/y$$

$$\Rightarrow y = 60 / \tan (54^{\circ})$$

$$\Rightarrow y = 43.6 \text{ ft} \quad \dots(1)$$

$\triangle ABD$

$$\tan (24^{\circ}) = 60/(x+y)$$

$$\Rightarrow (x+y) = 60 / \tan (24^{\circ})$$

$$\Rightarrow (x+y) = 134.76 \text{ ft.}$$

Putting value of y from eq. (1), we get:

$$\Rightarrow x = 134.76 - 43.6$$

$$\Rightarrow x = 91.16 \text{ ft} \quad \text{is the required answer.}$$