

### 2.3.4 To Draw an Arc of Radius R and Tangent to Two Given Lines

#### (a) Perpendicular Lines

- AB and AC are the two given lines perpendicular to each other. (Figure 2.28(a))
- Draw lines DE and FG parallel to the given lines AB and AC respectively and at a distance of R from them. (Figure 2.28(b))
- Mark intersection of these lines as point O, which the center of the required arc. With O as center and OD (= OF = R) as radius, draw the required arc. (Figure 2.28(c))

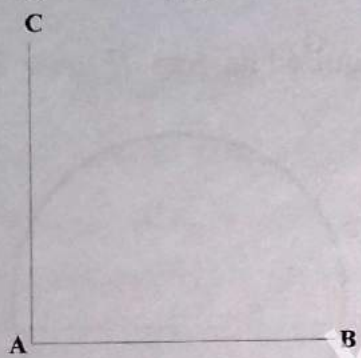


Figure 2.28(a)

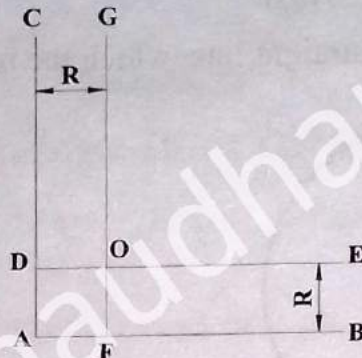


Figure 2.28(b)

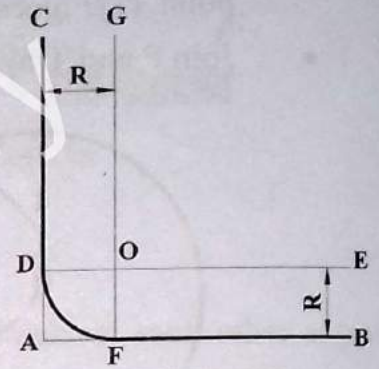


Figure 2.28(c)

#### (b) Inclined Lines

- AB and AC are the two given lines inclined to each other. (Figure 2.29(a))
- Draw lines DE and FG parallel to the given lines AB and AC respectively and at a distance of R from them. (Figure 2.29(b))
- Mark intersection of these lines as point O, which the center of the required arc. Drop perpendiculars from point O to the lines AB and AC and mark the foot of perpendiculars as H and I respectively. Then H and I are the points of tangency. (Figure 2.28(c))
- With O as center and OH (= OI = R) as radius, draw the required arc. (Figure 2.28(d))

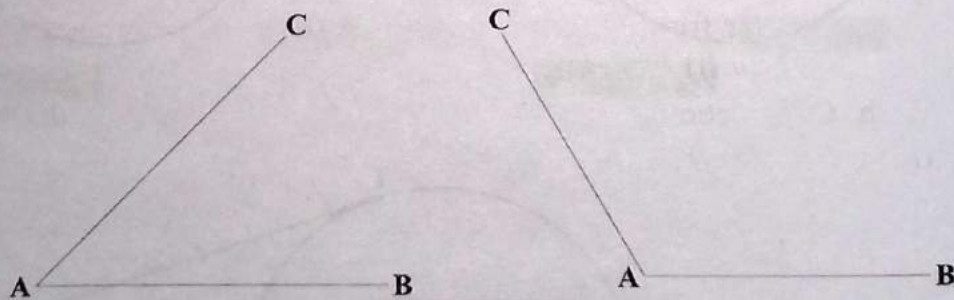


Figure 2.29(a)

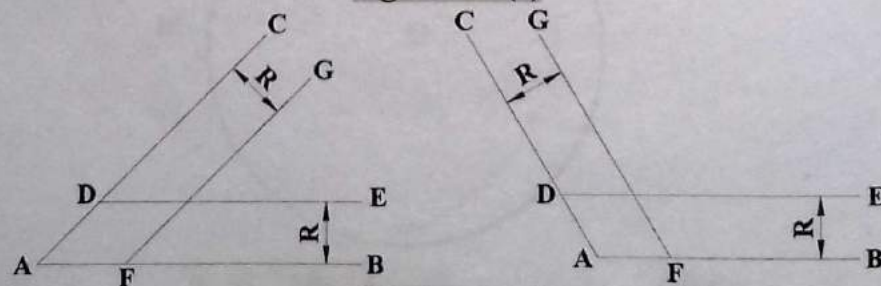


Figure 2.29(b)



