

EGD Grade 10

Geometric Constructions

External common arc to unequal circles

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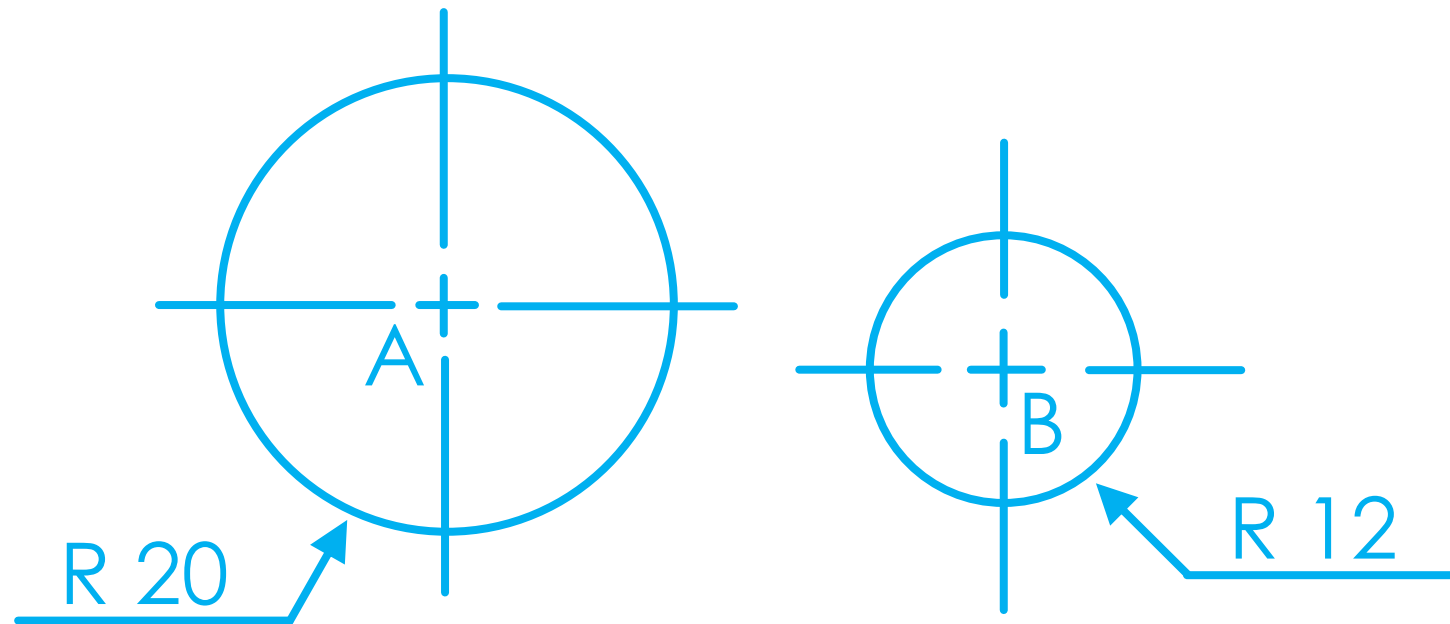
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Geometric Constructions

Question

- By means of construction, draw an external common arc with a radius of 60 mm to two unequal circles (A & B)



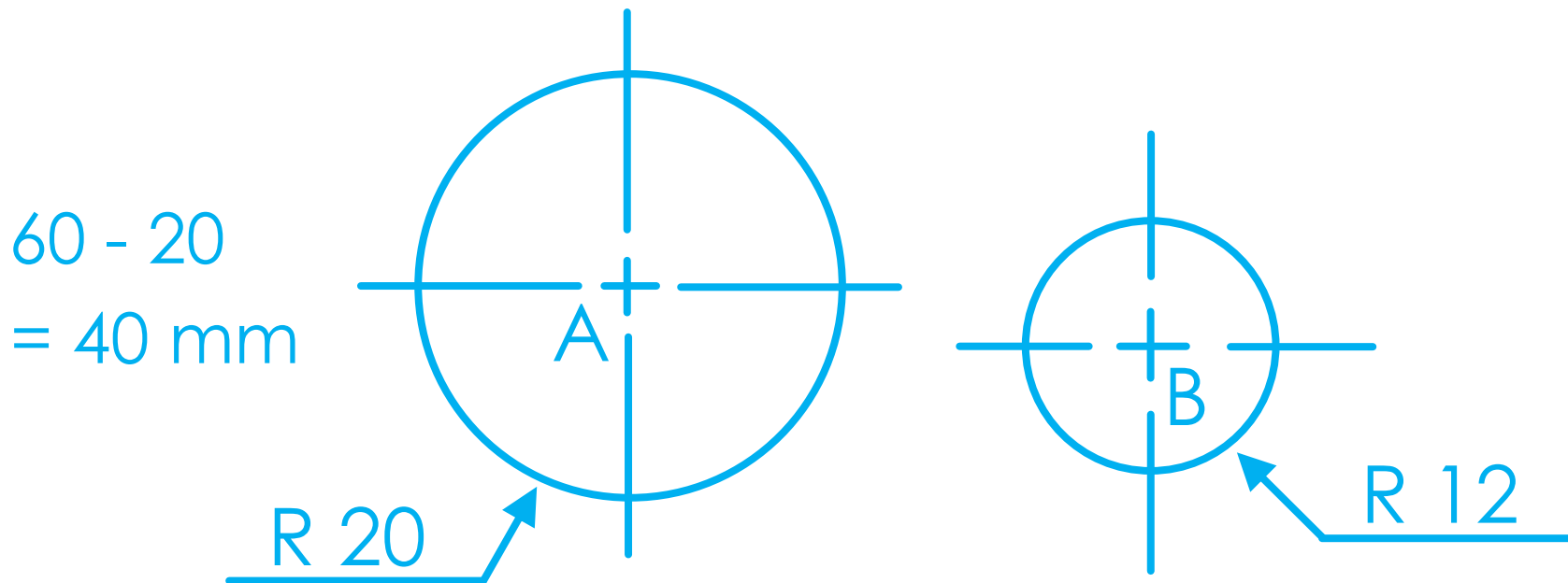
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Geometric Constructions

Step 1

- **Question:** Draw an external common arc to two unequal circles
- Subtract the radius of circle (A) from the radius of the arc.



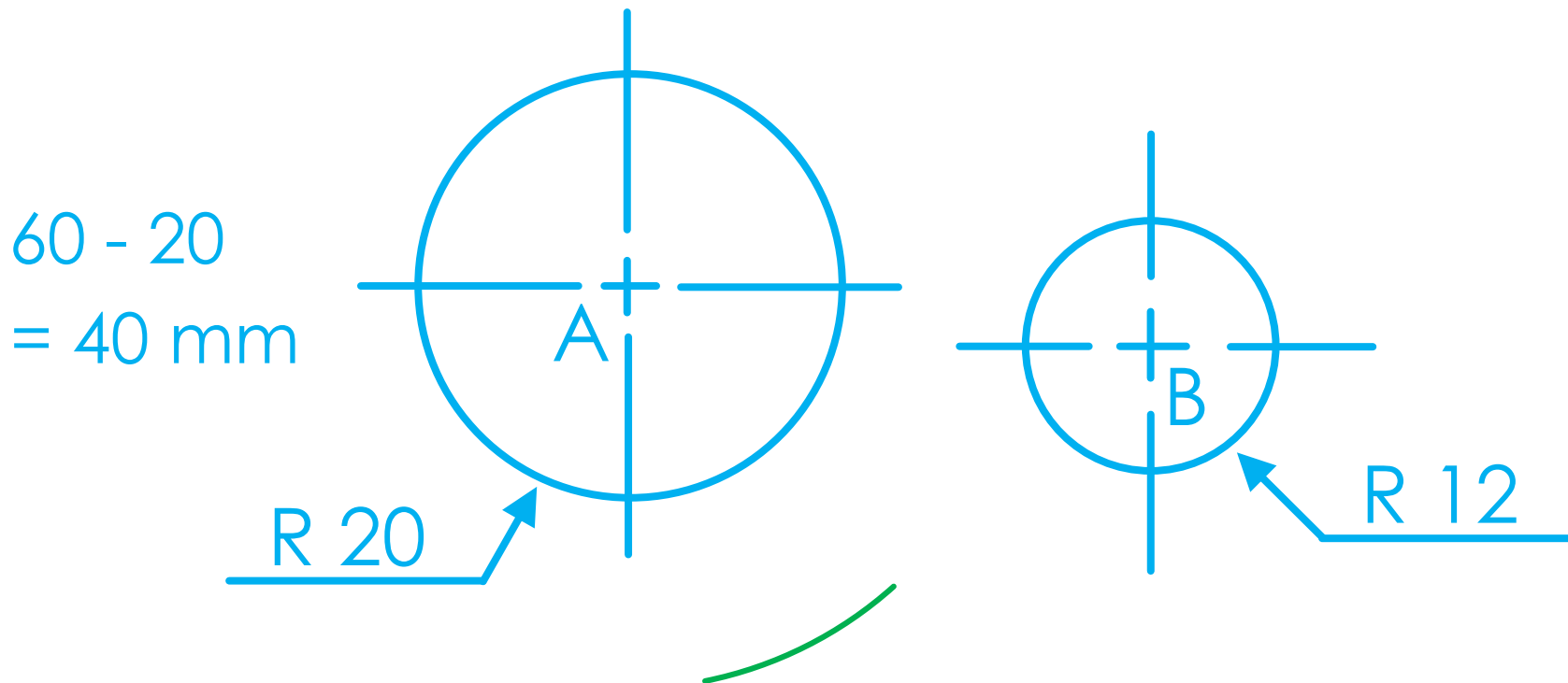
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Step 2

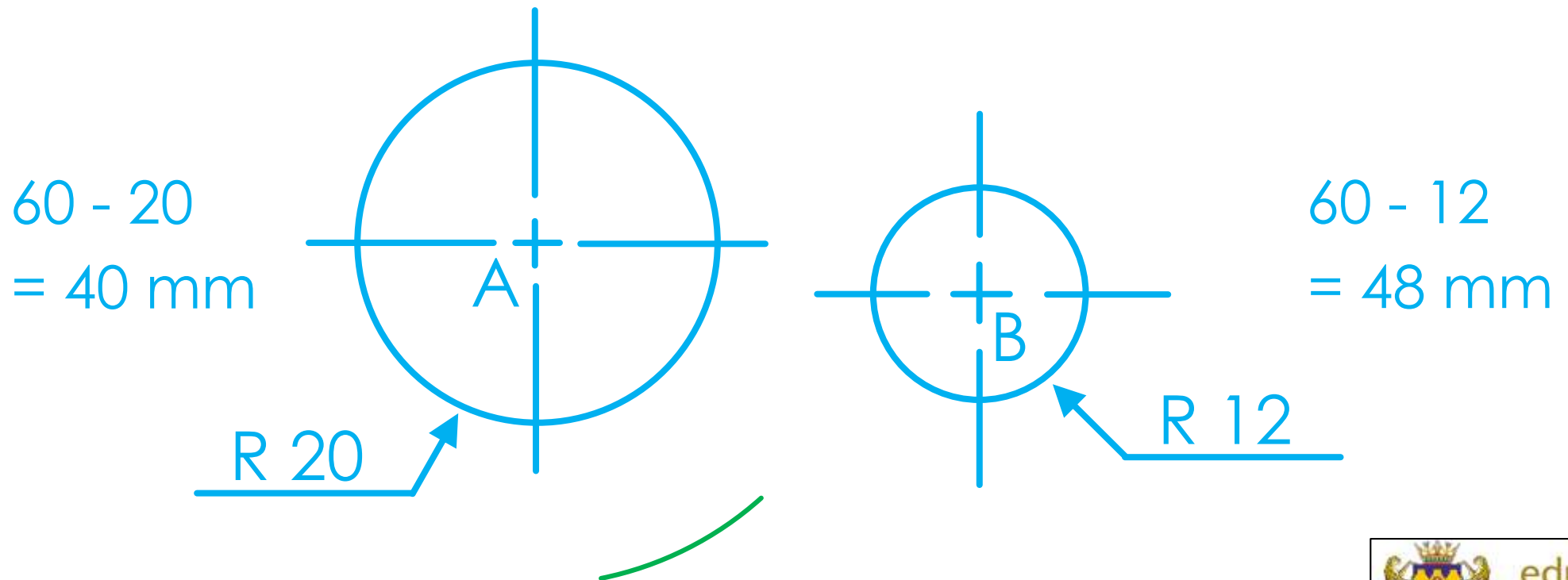
- **Question:** Draw an external common arc to two unequal circles
- From the centre point A draw a semi-circle of 40 mm



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Step 3

- **Question:** Draw an external common arc to two unequal circles
- Subtract the radius of circle (B) from the radius of the arc.



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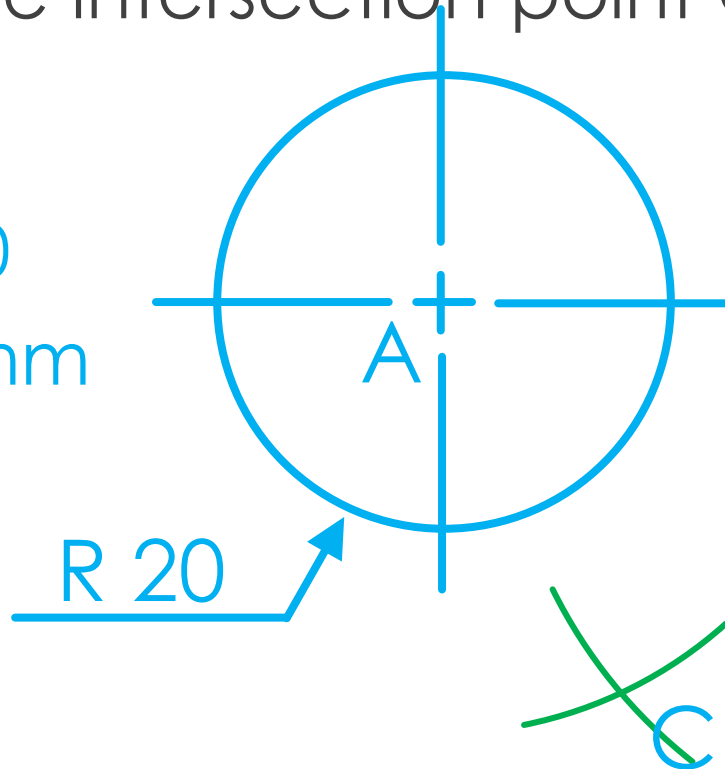
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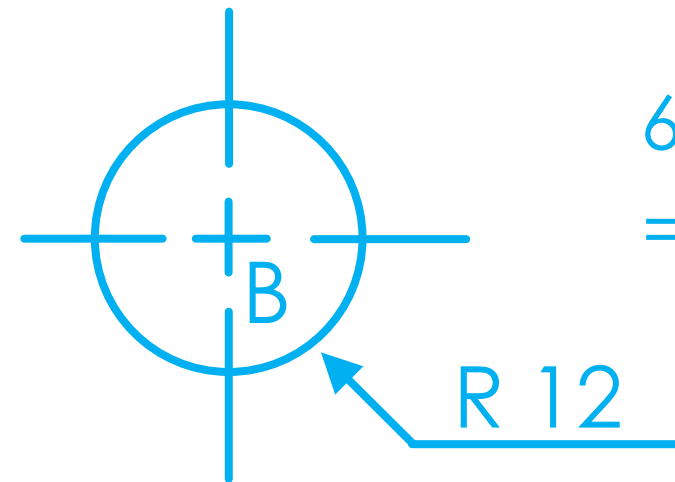
Step 4

- **Question:** Draw an external common arc to two unequal circles
- From centre point B draw a semi-circle of 48 mm to determine intersection point C

$$60 - 20 \\ = 40 \text{ mm}$$



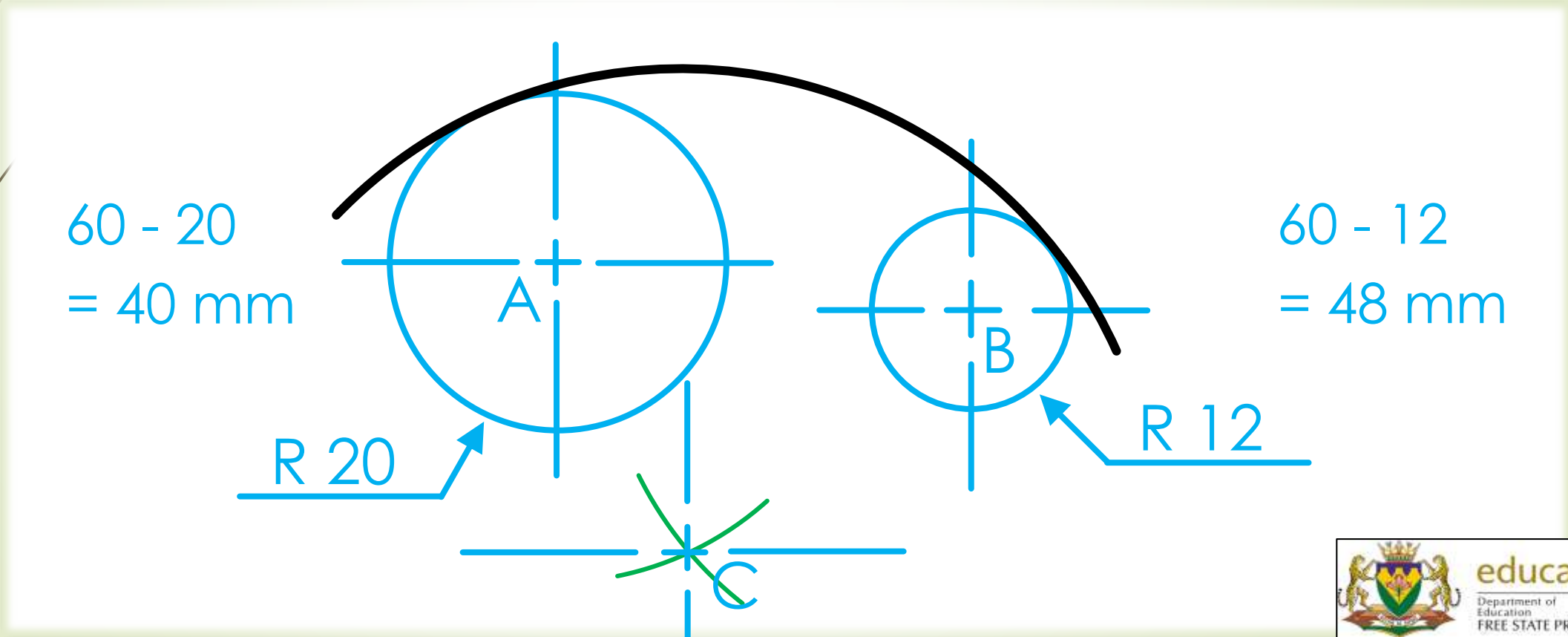
$$60 - 12 \\ = 48 \text{ mm}$$



Geometric Constructions

Step 5

- **Question:** Draw an external common arc to two unequal circles
- From point C draw an arc with a radius of 60 mm



Geometric Constructions

Task 1.6.4

- On the prepared A3 drawing sheet (Task 1.5.3), draw a circle (A) with a radius of 40 mm and circle (B) with a radius of 20 mm at 30° downwards and 100 mm to the right of point A.
- **Question:** Draw an external common arc of 120 mm to the two unequal circles.
- Show all construction lines.
- Name this task 1.6.4

