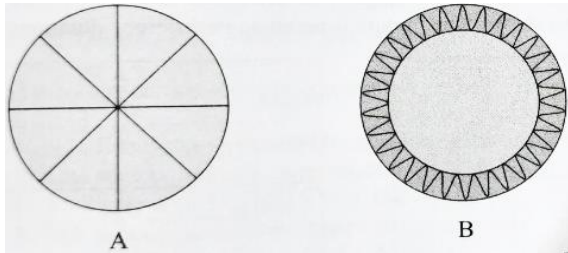


A Brooch

CASE STUDY 4:

A brooch is a small piece of jewellery which has a pin at the back so it can be fastened on a dress, blouse or coat.

Designs of some brooch are shown below. Observe them carefully.



Design A: Brooch A is made with silver wire in the form of a circle with diameter 28mm. The wire used for making 4 diameters which divide the circle into 8 equal parts.

Design B: Brooch b is made two colours_ Gold and silver. Outer part is made with Gold. The circumference of silver part is 44mm and the gold part is 3mm wide everywhere.

Refer to Design A

1. The total length of silver wire required is
 - a) 180 mm

- b) 200 mm
 - c) 250 mm
 - d) 280 mm
2. The area of each sector of the brooch is
- a) 44 mm^2
 - b) 52 mm^2
 - c) 77 mm^2
 - d) 68 mm^2

Refer to Design B

3. The circumference of outer part (golden) is
- a) 48.49 mm
 - b) 82.2 mm
 - c) 72.50 mm
 - d) 62.86 mm
4. The difference of areas of golden and silver parts is
- a) 18π
 - b) 44π
 - c) 51π
 - d) 64π
5. A boy is playing with brooch B. He makes revolution with it along its edge.
How many complete revolutions must it take to cover $80 \pi \text{ mm}$?
- a) 2
 - b) 3
 - c) 4
 - d) 5

ANSWERS:

- 1. b) 200mm
- 2. c) 77 mm^2
- 3. d) 62.86 mm
- 4. c) 51π
- 5. c) 4