25. Figure 1 shows a tile in the form of a trapezium, where $\alpha = 83\frac{1}{3}°$. Several copies of the tile are placed together to form a symmetrical pattern, part of which is shown in Figure 2. The outer border of the complete pattern is a regular 'star polygon'. Figure 3 shows an example of a regular 'star polygon'.

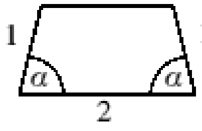
Figure 1


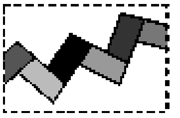
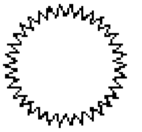
Figure 2


Figure 3


How many tiles are there in the complete pattern?

A 48 B 54 C 60 D 66 E 72

---

25. B Let the supplementary angle to α be β. Let tile 1 on the outside of the star polygon be horizontal. Counting anti-clockwise around the star polygon, tile 3 has an angle of elevation from the horizontal of $\beta - \alpha = 96\frac{2}{3}° - 83\frac{1}{3}° = 13\frac{1}{3}°$. As $360° \div 13\frac{1}{3}° = 27$, we need 27 pairs of tiles to complete one revolution. So there are 54 tiles in the complete pattern.