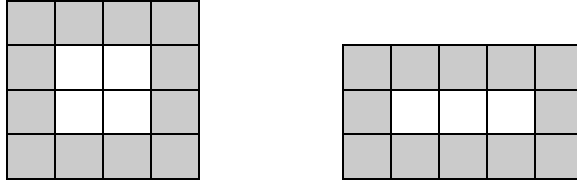


Tiling Table Tops

The *Texas Craft Company* makes custom square and rectangular tables with tile tops that look like this:



The border tiles are dark and the center tiles are light.

- A How many tiles of each type would be needed to make square table tops in these sizes?

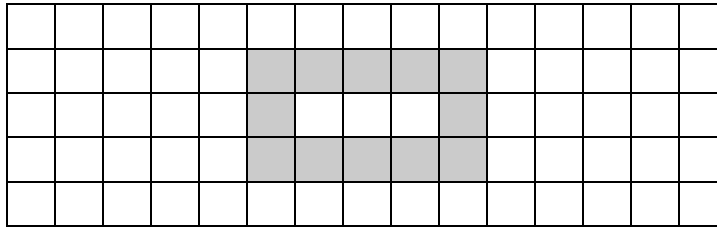
| Size | Dark Tile | Light Tile |
|---------|-----------|------------|
| 5 x 5 | | |
| 6 x 6 | | |
| 7 x 7 | | |
| 8 x 8 | | |
| 9 x 9 | | |
| 10 x 10 | | |
| n x n | | |

- B. When different groups worked on question A, they proposed the following answers:

| Group | Dark Tile | Light Tile |
|--------------|------------------|-------------------|
| I | $4n$ | $n^2 - 4n$ |
| II | $4n - 4$ | $(n - 2)^2$ |
| III | $4(n - 1)$ | $n^2 - 4(n - 1)$ |
| IV | $2n + 2(n - 2)$ | $n^2 - 4n + 4$ |

1. Are any of these formulas correct?
2. How do you think each group thought about the problem to get the formulas they got?
3. What other correct formulas could be given?

C. How many tiles of each type would be needed to make rectangular table tops in these sizes?



| Size | Dark Tile | Light Tile |
|--------|-----------|------------|
| 3 x 5 | | |
| 4 x 6 | | |
| 5 x 7 | | |
| 6 x 10 | | |
| 9 x 15 | | |

