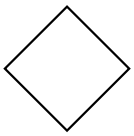
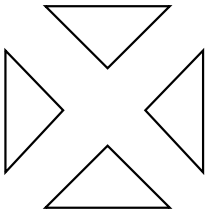
Table Tiling

Maria makes square tables, then sticks tiles to the top.

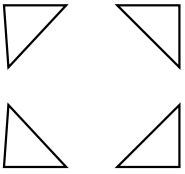
She uses three types of tiles:



whole tiles



half tiles

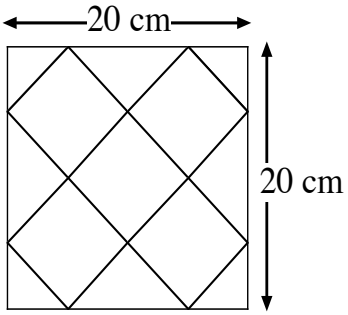


quarter tiles

The sizes of the square tabletops are all multiples of 10 cm.

Maria only uses quarter tiles in the corners and half tiles along the edges of the table.

Here is one tabletop:



This square table uses:
5 whole tiles, 4 half tiles,
4 quarter tiles.

1. How many tiles of each type will she need for a 40 cm by 40 cm square?

2. Describe a method for quickly calculating how many tiles of each type she needs for larger, square tabletops.

Please show your work on the page opposite

Table Tiling

1.

2.

	Table Tiling	Rubric	
		Points	Section points
1.	Gives correct answers: For a 40 cm by 40 cm square she will need: **25** Whole tiles **12** Half tiles **4** Quarter tiles	 2 2 1	 5
2.	Gives correct answers: For a table top of size 10n or For a table top of size x Whole tiles **$n^2 + (n-1)^2$** or **$x^2/100 + (x/10 - 1)^2$** *Partial credit* Gives rule: the differences increase by 4 each time Half tiles **4(n-1)** or **4(x/10 – 1)** *Partial credit* Gives rule: Add 4 to the previous result Quarter tiles **4**	 2 (1) 2 (1) 1	 5
	Total Points		**10**