

Cadbury Question

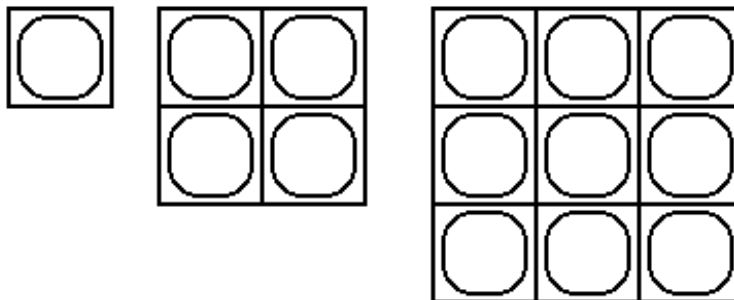
The designers at the Cadbury's chocolate factory were trying to come up with a new chocolate bar. The difference between this new bar and the old type of chocolate bar is that instead of being rectangular, the new bar will be square.

Task A Square Bars

Below are pictures of three bars of chocolate the designers thought up.

- 1) Write down the number of pieces of chocolate in each of the bars.
- 2) On squared paper, draw 3 more square chocolate bars. Count up the number of pieces of chocolate in each bar.
- 3) Now copy and complete the table below.

Length of Bar	1	2	3					
Number of pieces of chocolate in bar	1							

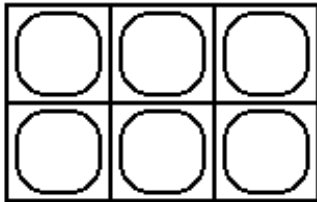


- 4) Write down the rule connecting the 'length of bar' with the 'number of pieces of chocolate in bar'.
- 5) The designers wanted to make a square chocolate bar with 50 pieces of chocolate in it. Can it be done? If not, why not?
- 6) The designers also wanted to make a deluxe bar with 100 pieces of chocolate. Can this be done? How long would the bar have to be?

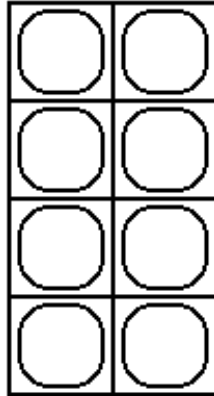
Task B Rectangular Bars

After exploring all the options for creating square chocolate bars, the designers decided to go back to their original rectangle bars. The suggestion was that a good rectangular bar must be at least 2 squares wide and at least 2 squares long. A few of the different bars they considered are shown on the next page.

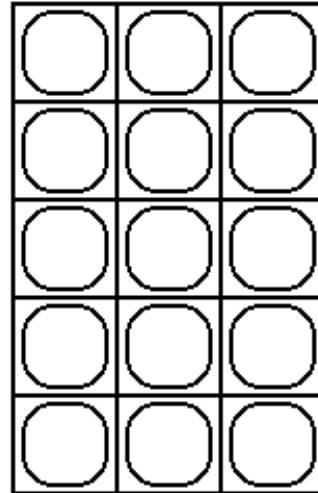
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Length 3
Width 2
Pieces 6



Length 2
Width 4
Pieces 8



Length 3
Width 5
Pieces 15

Now answer the following questions and explain your answers.

- 1) Is there a rule connecting the length, width and number of pieces in a rectangular bar?
- 2) Can you make a rectangular bar with 5 pieces or 9 pieces or 7 pieces? Which numbers can't you make?
- 3) How many different shape bars can you come up with that have 24 pieces? Do the same for bars with 48 pieces.
- 4) Look at the chocolate bar below. It is triangular in shape. Invent some more odd shaped bars and count how many pieces each has.

