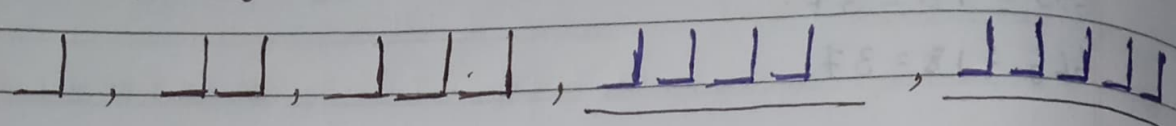


(4) In the following pattern, draw the next two figures: -



ii) Construct a table to describe the figures in the above pattern:-

N	1	2	3	4	5
L	2	4	6	8	10

The table is given above.

iii) If n denotes the no. of figures and L denotes the no. of matchsticks, find L in terms of n .

Value of L is -

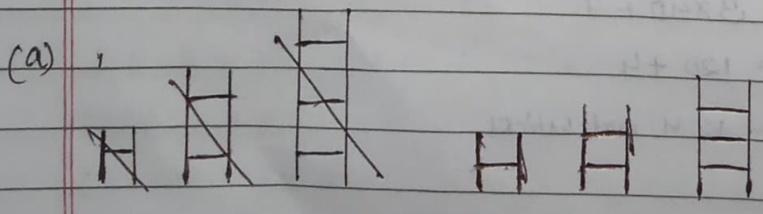
$$L = 2n$$

i) (1) 12th figure has = 2×12
= 24 matchsticks

(2) 20th figure has = 2×20
= 40 matchsticks.

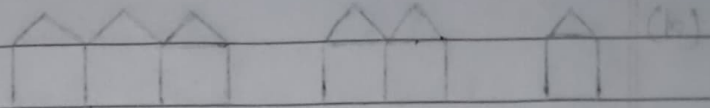
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(5) In each of the following patterns, construct the next figure:-

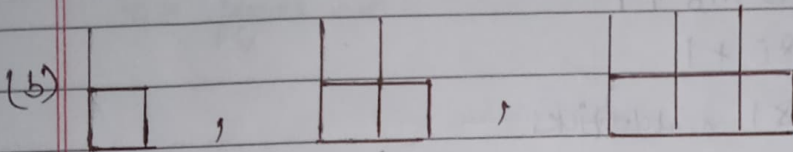


i) $F = 3n + 2$

ii) 16th figure has = $3 \times 16 + 2$
 $= 48 + 2$
 $= 50$



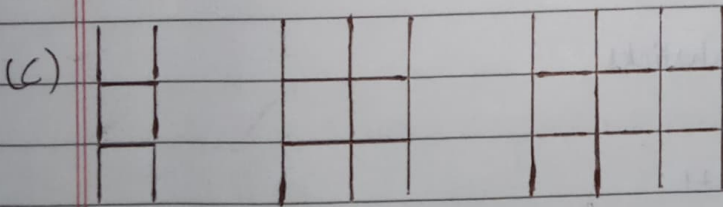
~~10~~³⁰th figure has = ~~$3 \times 10 + 2$~~ $= 3 \times 30 + 2$
 ~~$= 30 + 2$~~ $= 90 + 2$
 ~~$= 32$~~ $= 92$



i) $F = 4n + 1$

ii) 16th figure has = $4 \times 16 + 1$
 $= 64 + 1$
 $= 65$ matchsticks

~~10~~³⁰th figure has = ~~$4 \times 10 + 1$~~ $= 4 \times 30 + 1$
 ~~$= 40 + 1$~~ $= 120 + 1$
 ~~$= 41$~~ matchsticks. $= 121$ matchsticks



i) $F = 5n + 3$

ii) 16th figure has = $5 \times 16 + 3$
 $= 80 + 3$
 $= 83$ matchsticks

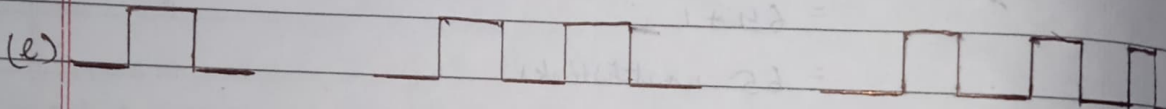
$$\begin{aligned}
 30\text{th figure has} &= 5 \times 30 + 3 \\
 &= 150 + 3 \\
 &= 153 \text{ matchsticks}
 \end{aligned}$$



i) $F = 5n + 1$

ii) 16th figure has = $5 \times 16 + 1$
 $= 80 + 1$
 $= 81 \text{ matchsticks}$

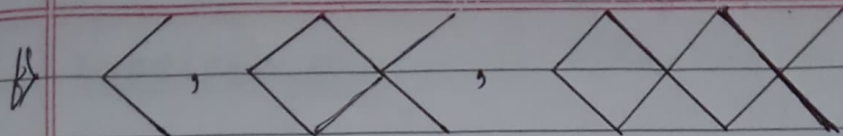
$$\begin{aligned}
 30\text{th figure has} &= 5 \times 30 + 1 \\
 &= 150 + 1 \\
 &= 151 \text{ matchsticks}
 \end{aligned}$$



i) $F = 4n + 1$

ii) 16th figure has = $4 \times 16 + 1$
 $= 64 + 1$
 $= 65 \text{ matchsticks}$

$$\begin{aligned}
 30\text{th figure has} &= 4 \times 30 + 1 \\
 &= 120 + 1 \\
 &= 121 \text{ matchsticks}
 \end{aligned}$$



$$F = 4n - 2$$

$$\begin{aligned} \text{ii) 16th figure has} &= 4 \times 16 - 2 \\ &= 64 - 2 \\ &= 62 \text{ matchsticks} \end{aligned}$$

$$\begin{aligned} \text{30th figure has} &= 4 \times 30 - 2 \\ &= 120 - 2 \\ &= 118 \text{ matchsticks} \end{aligned}$$