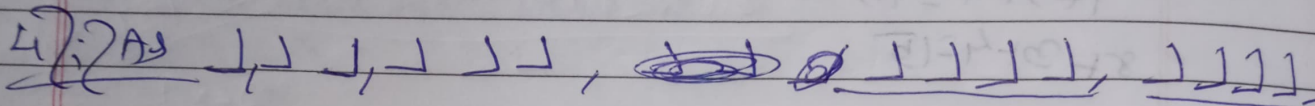


i) \Rightarrow 15th Figure has = $3 \times 15 + 4$
= 49 matches

2) 40th Figure has = $3 \times 40 + 4$
= 124 matches

iii) \Rightarrow It is clear that each time the Figure (n) is increased by 4, the number of matches (s) are increased by 3.

4) \Rightarrow 

i) \Rightarrow

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

Hence, the table is given above.

iii) \Rightarrow Hence, the value of L is $L = 2n$

iv) \Rightarrow Number of matchsticks in 12th Figure = $2 \times 12 = 24$

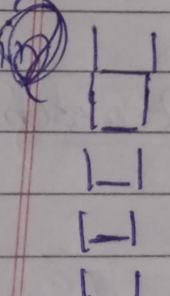
2) Number of matchsticks in 20th Figure = $2 \times 20 = 40$

HW

5) a) \Rightarrow

| | | | | |
|---|---|---|----|----|
| N | 1 | 2 | 3 | 4 |
| P | 5 | 8 | 11 | 14 |

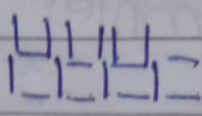
$P = 3n + 2$



i) \Rightarrow 16th = $16 \times 3 + 2 = 48 + 2 = 50$
30th = $30 \times 3 + 2 = 90 + 2 = 92$

b) i)

| | | | | |
|---|---|---|----|---------------|
| N | 1 | 2 | 3 | 4 |
| F | 5 | 9 | 13 | 17 |

 $F = 4n + 1$ 

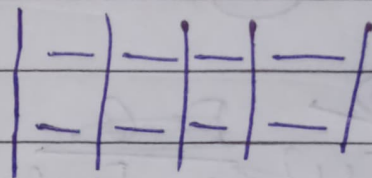
ii) $16^{\text{th}} = 16 \times 4 + 1 = 64 + 1 = 65$, $30^{\text{th}} = 30 \times 4 + 1 = 120 + 1 = 121$

c) i)

| | | | | | | |
|---|---|----|----|---------------|---------------|---------------|
| N | 1 | 2 | 3 | 4 | 5 | 6 |
| F | 8 | 13 | 18 | 23 | 28 | 33 |

 $F = 5n + 3$

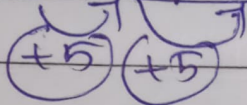
ii) $16^{\text{th}} = 5 \times 16 + 3 = 83$
 $30^{\text{th}} = 5 \times 30 + 3 = 150 + 3 = 153$



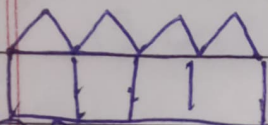
d) i)

| | | | |
|---|---|----|----|
| N | 1 | 2 | 3 |
| F | 6 | 11 | 16 |

 $F = 5n + 1$



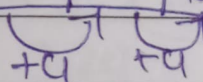
ii) $16^{\text{th}} = 81$ mathematics
 $30^{\text{th}} = 151$ mathematics

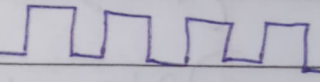


e) i)

| | | | |
|---|---|---|----|
| N | 1 | 2 | 3 |
| F | 5 | 9 | 13 |

 $4n + 1$

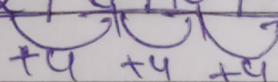


ii) 65 and 121 

f) i)

| | | | | |
|---|---|---|----|----|
| N | 1 | 2 | 3 | 4 |
| F | 2 | 6 | 10 | 14 |

 $4n - 2$



ii) 62 and 118 