**MORE QUADRATIC PATTERNS**

1. For the sequence 8; 20; 38; 62; ….determine:
2. The general term $T\_{n}$
3. The 20th term of the sequence

Solution: a. 8 20 38 62

 12 18 24 First difference

 6 6 Second difference $a=\frac{6}{2}=$ **3** $12=3a+b$ $12-3\left(3\right)=b$

 $b=3$ $8=a+b+c$ $8=3+3+c$ $8-6=c$ $2=c$

**Therefore:** $T\_{n}=3n^{2}+3n+2$

1. $T\_{20}=3\left(20\right)^{2}+3\left(20\right)+2$

$=1262$

**EXERCISE:** For the sequence 1; 6; 15; 28……determine:

1. The general term

b. the 10th term of the sequence