Solution (Patterns and a Formula)

The following pattern gives the rest of the triangular numbers.

0 + 2 = 3
0 + 5 + 5 = 10
0 + 7 + 7 + 7 = 21
0 + 9 + 9 + 9 + 9 = 36
.
.
.

The pattern for odd triangular numbers generalizes to
$a_n = 1+(n+2)\frac{(n+1)}{2}$ for odd n.

The pattern for even triangular numbers generalizes to
$a_n = \frac{n}{2}(n+1)$ for even n.

The formula for the nth triangular number is
$a_n = \frac{n(n+1)}{2}$ a familiar formula.