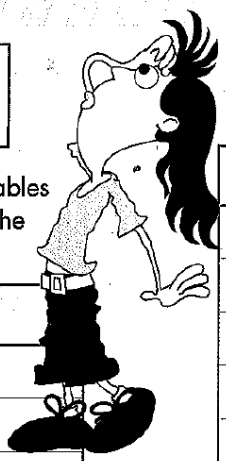
The greater it is, the less you see of it. What is it?



2 To solve the riddle, complete the tables then write the letter that matches the answer in the correct box below.

Square numbers		
1^2	1×1	1
2^2	2×2	4
3^2	3×3	9
4^2	4×4	16
5^2	5×5	25
6^2	6×6	36
7^2	7×7	(A)
(N)	8×8	64
9^2	9×9	(S)
10^2	(E)	100

Triangular numbers	
1	1
1 + 2	3
1 + 2 + 3	6
1 + 2 + 3 + 4	10
1 + 2 + 3 + 4 + 5	15
1 + 2 + 3 + 4 + 5 + 6	21
1 + 2 + 3 + 4 + 5 + 6 + 7	(R)
1 + 2 + 3 + 4 + 5 + 6 + 7 + 8	(D)
1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9	(S)
1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10	(K)

36	49	28	55	8^2	10x10	81	45

3 a Complete the table of values for the first ten square numbers.

Number	1	2	3							
Number squared	1	4	9							

b Look across the bottom row of the table of values and describe the repeated pattern in the gap from one square number to the next.

4 a Complete the table of values for the first ten triangular numbers.

Number	1	2	3							
Triangular number	1	3	6							

b Look across the bottom row of the table of values and describe the repeated pattern in the gap from one triangular number to the next.

challenge

A totally odd pattern: Add to find the total of –

the first two odd numbers (1 + 3) = ☐ the first four odd numbers = ☐

the first three odd numbers = ☐ the first five odd numbers = ☐

Use the pattern you see in the answers above to predict the total of the first ten odd numbers.