

YOU BUILT SOME PRETTY AMAZING PYRAMIDS OUT OF SPHERES (GOLF AND TENNIS BALLS).



NOW LET'S SEE IF YOU CAN WORK OUT THE NUMBER OF SPHERES IN EACH ROW OF THE SQUARE AND TRIANGULAR PYRAMID. IT IS NO COINCIDENCE THAT WE CALL THE NUMBERS IN THE SQUARE PYRAMID "SQUARE NUMBERS" AND THE NUMBERS IN THE TRIANGULAR PYRAMID "TRIANGULAR NUMBERS."

IF YOU ARE REALLY AMBITIOUS, ADD UP THE NUMBER OF TOTAL SPHERES IN EACH SQUARE AND TRIANGULAR PYRAMID. THESE ARE CALLED "SQUARE PYRAMID NUMBERS" AND "TETRAHEDRAL NUMBERS"



yes, this was Mr. Kramer climbing the Great Pyramid of Cheops in 1982.

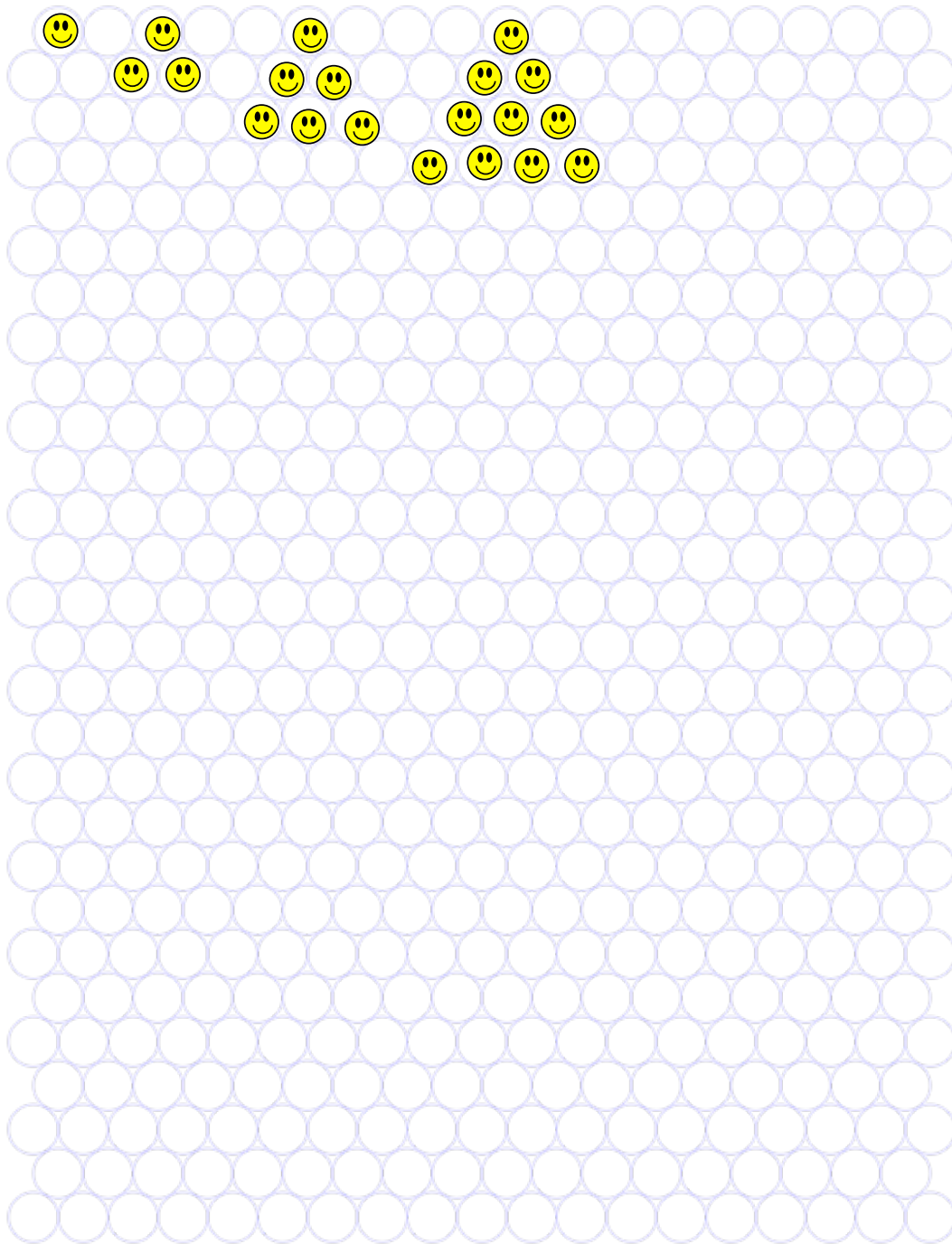
"come down Mr. Reagan"

near Cairo, Egypt

Square Numbers



Triangular Numbers



| Level of Pyramid | # of spheres on that level (Square Numbers) | # of spheres on that level (Triangular Numbers) | Total # of spheres in square pyramid (Square Pyramidal Numbers) | Total # of spheres in triangular pyramid (Tetrahedral Numbers) |
|------------------|---|---|---|--|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |

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| Level of Pyramid | # of spheres on that level (Square Numbers) | # of spheres on that level (Triangular Numbers) | Total # of spheres in square pyramid (Square Pyramidal Numbers) | Total # of spheres in triangular pyramid (Tetrahedral Numbers) |
|-------------------------|--|--|--|---|
| 1 | 1 | 1 | 1 | 1 |
| 2 | 4 | 3 | 5 | 4 |
| 3 | 9 | 6 | 14 | 10 |
| 4 | 16 | 10 | 30 | 20 |
| 5 | 25 | 15 | 55 | 35 |
| 6 | 36 | 21 | 91 | 56 |
| 7 | 49 | 28 | 140 | 84 |
| 8 | 64 | 36 | 204 | 120 |
| 9 | 81 | 45 | 285 | 165 |
| 10 | 100 | 55 | 385 | 220 |
| 11 | 121 | 66 | 506 | 286 |
| 12 | 144 (a gross) | 78 | 650 | 364 |
| 13 | 169 | 92 | 819 | 455 |
| 14 | 196 | 106 | 1015 | 560 |
| 15 | 225 | 121 | 1240 | 680 |
| 16 | 256 | 137 | 1496 | 816 |
| 17 | 289 | 154 | 1785 | 969 |
| 18 | 324 | 172 | 2109 | 1140 |
| 19 | 361 | 191 | 2470 | 1330 |