

Hint for Problem 31

Starting with the row 1 8 28 56 70 56 28 8 1, put dots below it where the elements of row 9 should be. Then put dots below that where the elements of row 10 should be. Do the same for rows 11 and 12. Mark the dot where $\binom{12}{3}$ should appear. Now mark the dots you need in row 11 to compute the marked entry in row 12. Now mark the dots you need in row 10 to compute the marked entries in row 11. Do the same for rows 9 and 8. Now you should be able to see what you need to do.