

4. A geometric sequence has $t_4 = -8$ and $t_{10} = -373\ 248$. Find the general term.

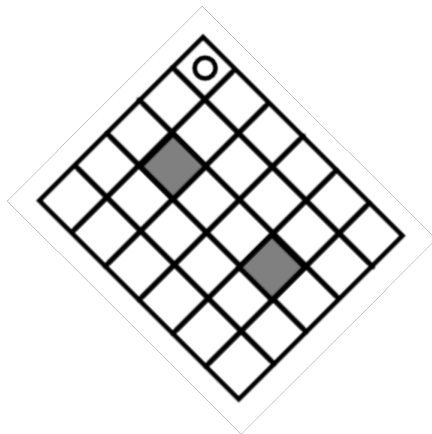
[3]

5. Find the sum of the series $28 + 20 + 12 + \dots - 172$.

[4]

7. Your checker piece starts in the very top corner of the board. Determine the number of different paths to move from the top to the bottom without passing through the shaded spaces. You may proceed to the next row by moving diagonally left or right. Show your thinking.

[2]



7. Expand and simplify **the first three terms** of $\left(2x^2 - \frac{1}{x^3}\right)^8$.

[3]