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Find formulas for the entries of M^n , where n is a positive integer.

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$$M^n = \begin{bmatrix} \boxed{5^n - 8n5^{n-1}} & \boxed{n5^{n-1}} \\ \boxed{-64n5^{n-1}} & \boxed{8n5^{n-1} + 5^n} \end{bmatrix}.$$