Math 131 - Dr. Miller - Supplement to HW #26, Fall 2024

Work the book problems on your own paper first, as usual, then work these six additional problems as well (also on your own paper - there's no room below). Note that below, I am not promising in advance that the explicit formula works. That's different from what our author does.

1. Confirm WHETHER $a_n = \dfrac{4^n - (-1)^n}{5}$ satisfies the recurrence relation $a_k = 3a_{k-1} + 4a_{k-2}$. Show work, and state your final claim.

2. Confirm WHETHER $b_n = 2$ satisfies the recurrence relation $b_k = 2b_{k-1} - b_{k-2}$. Show work, and state your final claim.

3. Confirm WHETHER $c_n = 2 + 3^n$ satisfies the recurrence relation $c_k = 2 + 3c_{k-1}$. Show work, and state your final claim.

4. Confirm WHETHER $d_n = (n+1)!$ satisfies the recurrence relation $d_k = (k+1)d_{k-1}$. Show work, and state your final claim.

5. Confirm WHETHER $e_n = n^2 - 5^n$ satisfies the recurrence relation $e_k = (-1)^k \cdot 5e_{k-1} - k^2$. Show work, and state your final claim.

6. Confirm WHETHER $f_n = (n-2) \cdot 4^n$ satisfies the recurrence relation $f_k = 8f_{k-1} - 16f_{k-2}$. Show work, and state your final claim.

Staple this question sheet to the back of your HW.