10-SE-128

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NUMERICAL ANALYSIS

QUIZ NO. 4

$$y_n = 3^n (A + Bn)$$

$$y_{n+2} - 6y_{n+1} + 9y_n = 0$$

$$y_{n+2} = 3^{(n+2)} (A + B(n+2))$$
$$= 3^{n+2} (A + Bn + 2B).$$

$$y_{n+1} = 3^{n+1} (A + B(n+1))$$
$$= 3^{n+1} (A + Bn + B).$$

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Proved

$$3^{n+2}(A+Bn+2B) - 6(3^{n+1}(A+Bn+B)) + 9(3^n(A+Bn)) = 0$$

$$3^n \cdot [3^2(A+Bn+2B) - 6(3^1(A+Bn+B)) + 9(A+Bn) = 0$$

$$3^n [9A + 9Bn + 18B - 18A - 18Bn - 18B + 9A + 9Bn.] = 0$$

$$3^n [0] = 0$$

$$0 = 0.$$

Proved