Show All Solutions

Rosen, Discrete Mathematics and Its Applications, 7th edition
Extra Examples
Section 8.2—Solving Linear Recurrence Relations

Extra Examples — *Page references correspond to locations of Extra Examples icons in the textbook.*

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p.516, icon at Example 3
#1. Solve: $a_n = 2a_{n-1} + 3a_{n-2},\ \ a_0 = 0,\ a_1 = 1.$

See Solution

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p.516, icon at Example 3
#2. Solve: $a_n = -7a_{n-1} - 10a_{n-2},\ \ a_0 = 3,\ a_1 = 3.$

See Solution

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p.516, icon at Example 3
#3. Solve: $a_n = 10a_{n-1} - 25a_{n-2},\ \ a_0 = 3,\ a_1 = 4.$

See Solution

p.516, icon at Example 3

#4. Suppose that the characteristic equation of a linear homogeneous recurrence relation with constant coefficients is

$$(r-3)^4(r-2)^3(r+6)=0.$$

Write the general solution of the recurrence relation.

See Solution

p.522, icon at Example 11

#1. Solve the recurrence relation $a_n = 3a_{n-1} + 2^n$, with initial condition $a_0 = 2$.

See Solution

p.522, icon at Example 11

#2. Solve the recurrence relation $a_n = 8a_{n-1} - 12a_{n-2} + 3n$, with initial conditions $a_0 = 1$ and $a_1 = 5$.

See Solution