

3, 
$$S - 2$$

a)  $y(n+1) - \frac{1}{2}y(n) = 0$ 
 $y(n) - \frac{1}{2}y(n-1) = 0$ 
 $y(n) = \frac{1}{2}y(n-1)$ 

$$y(0) = \frac{1}{2}y(n-1)$$

$$y(0) = \frac{1}{2}y(0) = \frac{5}{2}$$

$$y(1) = \frac{1}{2}y(0) = \frac{5}{2}$$

$$y(2) = \frac{1}{2}y(0) = \frac{5}{2}$$

$$y(3) = \frac{1}{2}y(0) = \frac{5}{2}$$

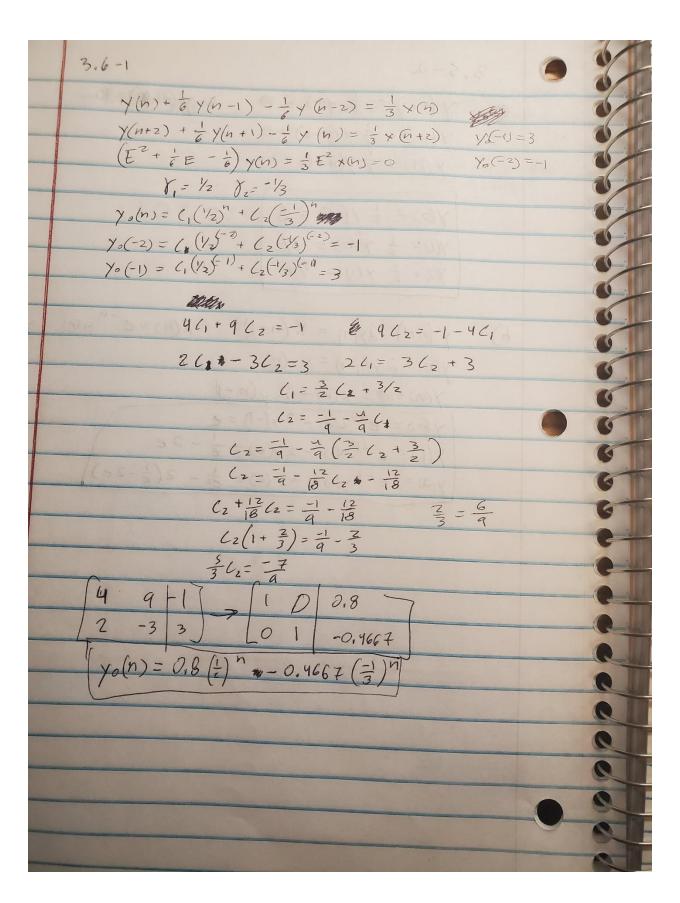
$$y(n) + 2y(n-1) = y(n)$$

$$y(n) + 2y(n-1) = y(n)$$

$$y(n) = y(n) = \frac{1}{2}y(n-1)$$

$$y(n) = \frac{1}{2}y(n-1) = \frac{1}{2}y(n-1)$$

$$y(n) = \frac{1$$



3,6-2 y (n+2) + 3y (n+1) + 2y (n) =0 y(n) + 3y(n-1) + 2y(n-2) = 0 y(0) + 3y(-1) + 2y(-2) = 0 $(E^2 + 3E + 2) y (n) = 0$   $(E^2 + 1) (E + 2) y (n) = 0$   $(E^2 + 3E + 2) y (n) = 0$   $(E^2 + 3E + 2) y (n) = 0$ YO(1)= (1 1(-1)"+ (2(-2)"  $\gamma_{0}(-1) = C_{1}(-1)^{-1} + C_{2}(-2)^{-1} = 0$   $= -C_{1} - C_{2}(\frac{1}{2}) = -C_{1} - \frac{1}{2}C_{2} = 00$  $y_0(-2) = C_1(-1)^{-2} + C_2(-2)^2 = 1$ =  $C_1(-1)^{-2} + (2/2)^2/4 - C_1 + \frac{1}{4}C_2 = 1$ /y.(n) = 2(-1) n - 4(-2) h

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daily_cases = [2034 2671 1460 1371 1556 1807 1738 1924 2611 1590 1386 1385 1829 1816
1837 2108 1379 1340];
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x = flip(daily_cases);

y = [];
for n = 6:18
     y(n) = (x(n - 1) + x(n - 2) + x(n - 3) + x(n - 4) + x(n - 5)) / 5;
end

figure;
hold on
plot(y(6:end));
hold on
bar(x(5:end));
hold off

xlabel('days since 9/24/21');
ylabel('new cases');
title('cases in Austria');
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