__5a__

$A = \begin{bmatrix} 1 & 4 & 5 \\ 4 & -7 & 0 \\ 5 & 0 & 7 \end{bmatrix}$ $\quad r_n = A r_{n-1} \quad$ $r_0 = \sqrt{3}\begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$

$$r_1 = \begin{bmatrix} 1 & 4 & 5 \\ 4 & -7 & 0 \\ 5 & 0 & 7 \end{bmatrix} \frac{1}{\sqrt{3}} \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} = \frac{1}{\sqrt{3}} \begin{bmatrix} 10 \\ 1 \\ 12 \end{bmatrix} \longrightarrow r_2 = A \frac{1}{\sqrt{3}} \begin{bmatrix} 10 \\ 1 \\ 12 \end{bmatrix} = \frac{1}{\sqrt{3}} \begin{bmatrix} 74 \\ 37 \\ 134 \end{bmatrix}$$

$\lambda_1 = 15 \quad \lambda_2 \approx 11.16666667$

$$r_3 = A \begin{bmatrix} 74 \\ 37 \\ 134 \end{bmatrix} \frac{1}{\sqrt{3}} = \frac{1}{\sqrt{3}} \begin{bmatrix} 892 \\ 185 \\ 1308 \end{bmatrix} \longrightarrow r_4 = \frac{1}{\sqrt{3}} A \begin{bmatrix} 892 \\ 185 \\ 1308 \end{bmatrix} = \begin{bmatrix} 8172 \\ 3013 \\ 13616 \end{bmatrix} \frac{1}{\sqrt{3}}$$

$\lambda_3 \approx 9.76119403 \quad \lambda_4 \approx 10.40978893$

$$r_5 = A \frac{1}{\sqrt{3}} \begin{bmatrix} 8172 \\ 3013 \\ 13616 \end{bmatrix} = \begin{bmatrix} 88304 \\ 23649 \\ 136172 \end{bmatrix}$$

$\lambda_5 \approx 10.00088132$

$$\left| \frac{\lambda_3 - \lambda_2}{\lambda_2 - \lambda_1} \right| = .16849$$

n	C_n	$C_{n+1} - C_n$
1	11.0959	.42898
2	9.62296	
3		
4		