———— // ————

1.

a)

$$x \longrightarrow \boxed{a} \longrightarrow y$$

b)

$$x \cdot a = y \iff \frac{y}{x} = a$$

c)

$$
\begin{array}{c|ccc}
3 & 1 & 8 & 0 \\
2 & 4 & 16 & 0 \\
1 & d_{n-1} & -\frac{1}{4}\left|\begin{smallmatrix} 1 & 0 \\ 4 & 0 \end{smallmatrix}\right| = 0 \\
0 & e_{n-1} &
\end{array}
$$

$$b_{n-1} = -\frac{1}{4} \times \left| \begin{matrix} 1 & 8 \\ 4 & 16 \end{matrix} \right|$$

$$= -\frac{1}{4}(16-32) = 4$$

$$c_{n-1} = -\frac{1}{4} \left| \begin{matrix} 4 & 16 \\ 4 & 0 \end{matrix} \right|$$

$$= -\frac{1}{4}(16 \times 4) = 16.$$

$\gg$ não ha mudança de sinal logo é estavel, ou não exist raizes com parte positiva.

1 b) $s^6 + 4s^5 + 3s^4 + 2s^3 + s^2 + 4s + 4.$

$$
\begin{array}{c|cccc}
6 & 1 & 3 & 1 & 4 \\
5 & 4 & 2 & 4 & 0 \\
4 & b_{n-1}\,\frac{5}{2} & b_{n-3}\,0 & b_{n-5} & \\
3 & c_{n-1}\,2 & c_{n-3}\,\frac{-12}{5} & c_{n-5} & \\
2 & d_{n-1}\,3+\varepsilon & d_{n-3}\,4 & & \\
1 & e_{n-1}\,\frac{-8}{5}-\frac{3\varepsilon}{5} & e_{n-3}\,0 & & \\
0 & d_{n-3}\,4 & & &
\end{array}
$$

$$b_{n-1} = -\frac{1}{4} \left| \begin{matrix} 1 & 3 \\ 4 & 2 \end{matrix} \right| = \frac{10}{4} = \frac{5}{2}$$

$$b_{n-1} = -\frac{1}{4} \left| \begin{matrix} 1 & 1 \\ 4 & 4 \end{matrix} \right| = 0$$

$$b_{n-5} = -\frac{1}{4} \left| \begin{matrix} 1 & 4 \\ 4 & 0 \end{matrix} \right| = 4$$

$$c_{n-1} = -\frac{2}{5} \left| \begin{matrix} 4 & 2 \\ \frac{5}{2} & \varepsilon \end{matrix} \right| =$$

$$= -\frac{8}{5}\varepsilon + 2 \approx 2$$

$$d_{n-1} = -\frac{1}{2} \cdot \left| \begin{matrix} \frac{5}{2} & \varepsilon \\ 2 & -\frac{12}{5} \end{matrix} \right| = -\frac{1}{2}(-6-2\varepsilon)$$

$$= 3 + \varepsilon \approx 3$$

$$d_{n-3} = -\frac{1}{2} \cdot \left| \begin{matrix} \frac{5}{2} & 4 \\ 2 & 0 \end{matrix} \right| = -\frac{1}{2}(-8)$$

$$= 4$$