1b)     $P(S) = S^6 + 4S^5 + 3S^4 + 2S^3 + S^2 + 4S + 4$

| | 6 | 1 | 3 | 1 | 4 |
|---|---|---|---|---|---|
| + | 5 | 4 | 2 | 4 | |
| + | 4 | $\frac{10}{4}$ | $\emptyset$ | 4 | |
| + | 3 | 2 | $\frac{-24}{10}$ | | |
| + | 2 | 3 | 4 | | |
| − | 1 | $\frac{152}{-30}$ | | | |
| + | 0 | 4 | | | |

two sign changes

$b_{n-1} = - \dfrac{(1 \cdot 2 - 4 \cdot 3)}{4} = \dfrac{10}{4}$

$b_{n-3} = - \dfrac{(1 \cdot 4 - 4 \cdot 1)}{4} = \emptyset$

$b_{n-5} = - \dfrac{(1 \cdot \emptyset - 4 \cdot 4)}{4} = 4$

$c_{n-1} = - \dfrac{(4 \cdot \emptyset - \frac{10}{4} \cdot 2)}{\frac{10}{4}} = 2$

$c_{n-3} = - \dfrac{(4 \cdot 4 - \frac{10}{4} \cdot 4)}{\frac{10}{4}} = -\dfrac{24}{10}$

two roots with positive real parts

$d_{n-1} = - \dfrac{(\frac{10}{4} \cdot (\frac{-24}{10}) - 2 \cdot \emptyset)}{2} = 3$

$d_{n-3} = - \dfrac{(\frac{10}{4} \cdot \emptyset - 2 \cdot 4)}{2} = 4$

$e_{n-1} = - \dfrac{(2 \cdot 4 - 3 \cdot (\frac{-24}{10}))}{3}$
$\quad\quad = - \dfrac{152}{30}$

$e_{n-1} = - \dfrac{(3 \cdot \emptyset - (\frac{-152}{30}) \cdot 4)}{-\frac{152}{30}}$
$\quad\quad = 4$