2 c) $P(s) = s^4 + 6s^2 + 25$ All coefficientes are positive

- Apply Routh-Hurwitz criterion:

4	1	6	25
3	∅	∅	
2			
1			
0			

special case 2:
- If all the coefficientes in any defined Row are zero, it indicates that there are roots of equal magnitude lying radially opposite in the s plane.
- two real roots with equal magnitudes and opposite signs and/or two conjugate imaginary roots

- In this case the evaluation can continue by forming an auxiliary polynomial in the next row

$$\boxed{P(s) = s^4 + 6s^2 + 25}$$

Formed by the coeficientes of the previoes line

- the ∅ terms row are replaced by:

$$\frac{d}{ds} P(s) = 4s^3 + 12s$$

- then becomes

+	4	1	6	25
+	3	4	12	
+	2	3	25	
−	1	$-\frac{64}{3}$		
+	0	25		

two sign changes

$$b_{n-1} = -\frac{(1 \cdot 12 - 4 \cdot 16)}{4} = 3$$

$$b_{n-3} = -\frac{(1 \cdot \emptyset - 4 \cdot 25)}{4} = 25$$

$$c_{n-1} = -\frac{(4 \cdot 25 - 3 \cdot 12)}{3} = -\frac{64}{3}$$

$$d_{n-1} = -\frac{(3 \cdot \emptyset - (-\frac{64}{3} \cdot 25))}{-\frac{64}{3}} = 25$$

∴ two roots with positive real parts, the system is unstable.