1   Assume the AR(p) model: $y_t = a_0 + \sum\limits_{i=1}^{p} a_i y_{t-i} + e_t$ 10 pts.

Given the coefficients below, are each of the combinations stationary?
If so, to what value do they converge? (Take values out to 4 decimal places)

	a_0	a_1	a_2	a_3	Stationary?	If yes, converges to ___ ?
a	0.5	-1	0	0		
b	0.5	-1	-0.5	0		
c	0.5	-1	0.5	0		
d	0.5	0	1	0		
e	0.5	1.5	-0.8	0		
f	0.5	1.5	0.8	0		
g	0.5	-0.5	0.5	0.5		
h	0.5	-0.5	0.5	-0.5		
i	0.5	-1	0	0.5		
j	0.5	1	-1	0.8		

2   For an AR(1) model, what is the contribution to y_t from y_{t-5} if $a_1 = 0.2$?   5 pts.

3   Plot the first 12 psi-weights given the following AR(3) coefficients: 10 pts.

a_0	a_1	a_2	a_3
0.3	0.8	-0.4	0.3

Ψ_0	
Ψ_1	
Ψ_2	
Ψ_3	
Ψ_4	
Ψ_5	
Ψ_6	
Ψ_7	
Ψ_8	
Ψ_9	
Ψ_{10}	
Ψ_{11}	
Ψ_{12}	