

**Instructions:** Show all work. Answer each question as completely as possible. Use exact values. For counting problems you may use scientific notation (with three significant figures) for any numbers larger than a million.

1. Apportion 150 seats using Hamilton's Method by completing the table below.

State	Population	Standard Quota	Lower Quota	Upper Quota	+1	Final Apportionment
Samia	9009	43.44	43	44		43
Ternium	5912	28.51	28	29	+1	29
Ullias	6954	33.53	33	34	+1	34
Vortiox	4362	21.03	21	22		21
Woosiel	4871	23.49	23	24		23
Total	31,108		148			150
Standard Divisor	207.387					

2. Describe the Quota Rule.

The quota rule says no one should get fewer seats than the next integer below the Standard Quota or get more than the one above it.

3. Below is an example of two different apportionments of the same states, one with 18 seats, one with 19 seats. What paradox is this an example of? Indicate where the paradox occurred.

City	Hamilton apportionment with 18 board members	Hamilton apportionment with 19 board members
Cardiff	6	7
Solana	2	2
Vista	2	1
Pauma	3	4
Pacific	5	5
Total	18	19

Alabama Paradox

Vista lost a seat when more seats became available.