MAT 100, Quiz #5, Summer 2017 Name KEY

Instructions: Show all work. Use exact answers unless otherwise directed to round.

1. The population of Maryland in 2017 is estimated to be 6,068,511. If the State legislature (lower house), with 141 seats, were to be reapportioned today, what would be the standard divisor?

$\frac{6068511}{141} = 43039.09$

2. Explain what happens in the New States Paradox. Why is this a fairness violation?

a state is apportioned new seats based on old st. divisor & seats added to legislature. but adding state's population & reapportioning affects apportioning of old states. should not have an affect

3. Apportion the following table of an imaginary state legislature according to Hamilton's Method if there are 245 seats to be apportioned.

STATE	POPULATION	STANDARD QUOTA	LOWER QUOTA	UPPER QUOTA	+1	FINAL APPORTIONMENT
LIGHTELF	65,191	54.39299	54	55		54
SHADOWWALL	40,733	33.9861	33	34	+1	35
REDBRIDGE	85,647	71.4607	71	72		71
ICEHOLLOW	20,015	16.69978	16	17	+1	17
FREYCLIFF	78,884	65.8179	65	66	+1	66
CLEARKEEP	3,167	2.6424	2	3	+1	3
TOTALS	293,637					245

St. Div. $\frac{293637}{245} = 1198.5184$

4. Apportion the following table of an imaginary state legislature according to Jefferson's Method if there are 245 seats to be apportioned.

STATE	POPULATION	STANDARD QUOTA	MODIFIED QUOTA	MODIFIED QUOTA	MODIFIED QUOTA	FINAL APPORTIONMENT	
LIGHTELF	~~66,138~~	54.39	55.01			55	ok
SHADOWWALL	~~44,608~~	33.986	34.34			34	ok
REDBRIDGE	~~54,791~~	71.46	72.27			72	ok
ICEHOLLOW	20,015	16.69978	16.89			16	ok
FREYCLIFF	~~76,732~~	65.8179	66.562			66	ok
CLEARKEEP	3,167	2.64	2.67			2	ok
TOTALS	293,637					245	

Same as above

MD = 1185 works

5. Is there a Quota Rule violation in #4? Why or why not?

No, there is not. States received either their upper or lower quota