

STUDY #1:
MEASURING & MAPPING RACIAL DIVERSITY IN
SAN FRANCISCO PRECINCTS

Working Paper

Rich DeLeon

(7/15/03)

The Racial Diversity Index

My approach to measuring the level of racial diversity in SF precincts has a straightforward logic and uses available precinct-level U.S. Census 2000 data.

The logic:

A precinct's Racial Diversity Index (RDI) score is the probability that two individuals selected randomly from a voter age population (VAP) comprising five racial/ethnic groups will belong to different groups. To compute that probability, subtract the probability that the two individuals will belong to the same group from 1.00. For example, if whites make up .50 (50%) of a precinct's VAP, the probability that the two randomly selected individuals will both be white is simply .50 times .50 = .25, or 1 chance in 4. Calculate this same-race probability for each of the remaining four racial/ethnic groups (which are Asians, Latinos, Blacks, and Other Race), then subtract the sum of those five probabilities from 1.00, then multiply by 100, and that gives the precinct's Racial Diversity Index score.

The data:

Precinct data on voter age population (VAP) 2000 by Department of Justice-defined race/ethnicity (U.S. Census PL94-171 2000) are from the precinct-level redistricting dataset downloaded from the UC Berkeley/IGS Statewide Database website (<http://swdb.berkeley.edu/>).

Two examples:

(1) **Precinct 3405**, with a Racial Diversity Index (RDI) score of 75.18, is the *most racially diverse precinct* in San Francisco by this measure. In Precinct 3405 (as of November 2000), .280 of the VAP were White, .311 were Asian, .116 were Latino, .238 were Black, and .054 were Other Race. Compute Precinct 3405's RDI score as 100 times

$(1.00 - [.280 \text{ times } .280] - [.311 \text{ times } .311] - [.116 \text{ times } .116] - [.238 \text{ times } .238] - [.054 \text{ times } .054]) = 75.18$.

(2) **Precinct 3235**, with an RDI score of 8.70, is the city's *least racially diverse (most racially homogeneous) precinct* by this measure. In Precinct 3235, .024 of the VAP were White, .955 were Asian, .006 were Latino, .003 were Black, and .001 were Other Race. Compute Precinct 3235's RDI score as 100 times $(1.00 - [.024 \text{ times } .024] - [.955 \text{ times } .955] - [.006 \text{ times } .006] - [.003 \text{ times } .003] - [.001 \text{ times } .001]) = 8.70$.

Note: The maximum RDI score given five groups is 80. The minimum, of course, is zero.

Frequency Distribution of Precinct RDI Scores

Figure 1 below shows the distribution of precinct RDI scores.

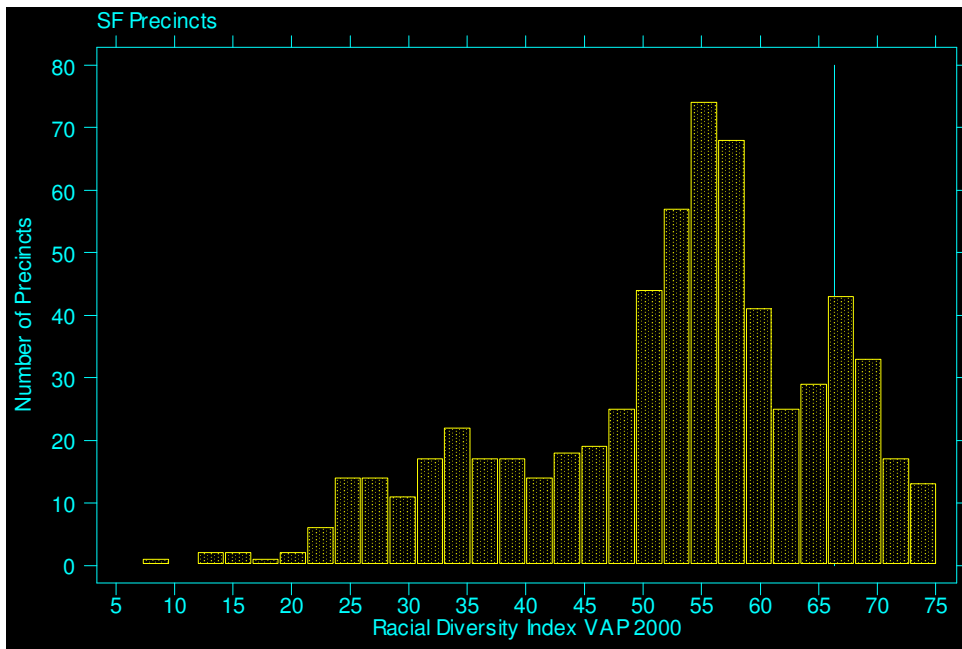


Figure 1: Histogram showing frequency distribution of San Francisco precincts on the Racial Diversity Index. (Vertical blue line shows the citywide RDI score of 66.36.)

San Francisco's citywide RDI score of 66.36 is very high, consistent with earlier studies by geographers identifying SF as one of the most racially diverse counties in America. Perhaps more surprising, considering how racially segregated many U.S. cities are, is the extent to which SF's overall high level of racial diversity is replicated at the much smaller spatial scale of its precincts. The average precinct RDI is 52.3, and 94 of the city's 646 precincts have RDI scores that exceed the citywide RDI score of 66.36. (Twenty-five of those 94 are located in BOS District 11, with another 22 in District 6 and 18 in District 10.)

Racial Diversity in the Board of Supervisors (BOS) Districts

Table 1 gives the breakdown of the average precinct RDI scores by District.

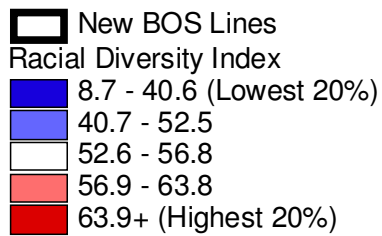
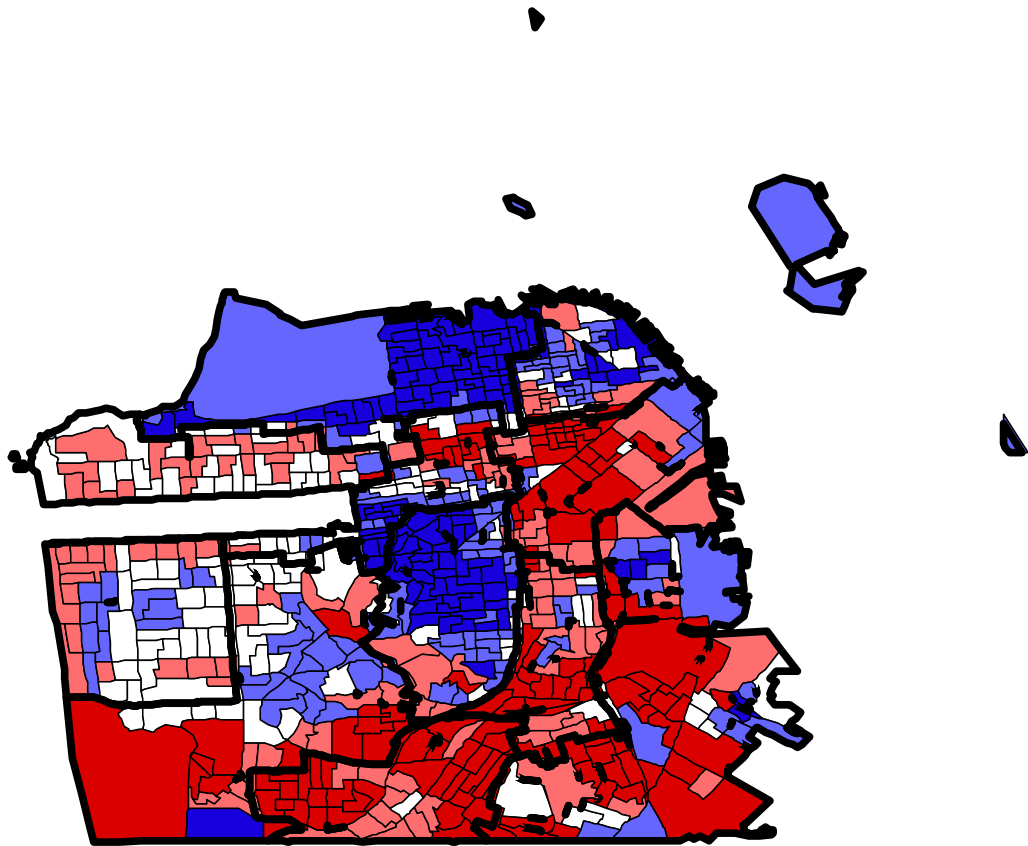
Table 1: Breakdown of Average Precinct Racial Diversity Index (RDI) Score by BOS District

District	Average RDI Score
1	56.5
2	32.4
3	48.4
4	55.6
5	52.4
6	64.8
7	55.9
8	42.8
9	61.8
10	57.0
11	65.7
Total	52.3

Based on average precinct RDI scores, District 11 (65.7) is San Francisco's most racially diverse BOS district, and District 2 (32.4) is the least.

A Map of Racial Diversity in San Francisco Precincts

Map of Racial Diversity in San Francisco Racial Diversity of Precinct VAP 2000 (San Francisco Precincts)



STUDY #2:
A TYPOLOGY & MAP OF SAN FRANCISCO
PRECINCTS BY RACE & IDEOLOGY

Working Paper

Rich DeLeon

(7/15/03)

Intro:

I used precinct scores on the new Progressive Voting Index (PVI) and precinct-level U.S. Census 2000 statistics on the racial composition of voter age population (VAP) to construct a typology of SF precinct electorates classified by race and ideology.

Method:

(1) Classify precincts into majority White VAP, majority Asian VAP, majority Latino VAP, Majority Black VAP, and “Diverse” VAP (i.e., no one racial group has a majority of VAP).

(2) Classify precincts in each of those five racial group categories into “Progressive” (highest third of precincts on the PVI), “Moderate” (middle third on the PVI), and “Conservative” (lowest third on the PVI).

This 5 by 3 classification produces a 15-cell typology.

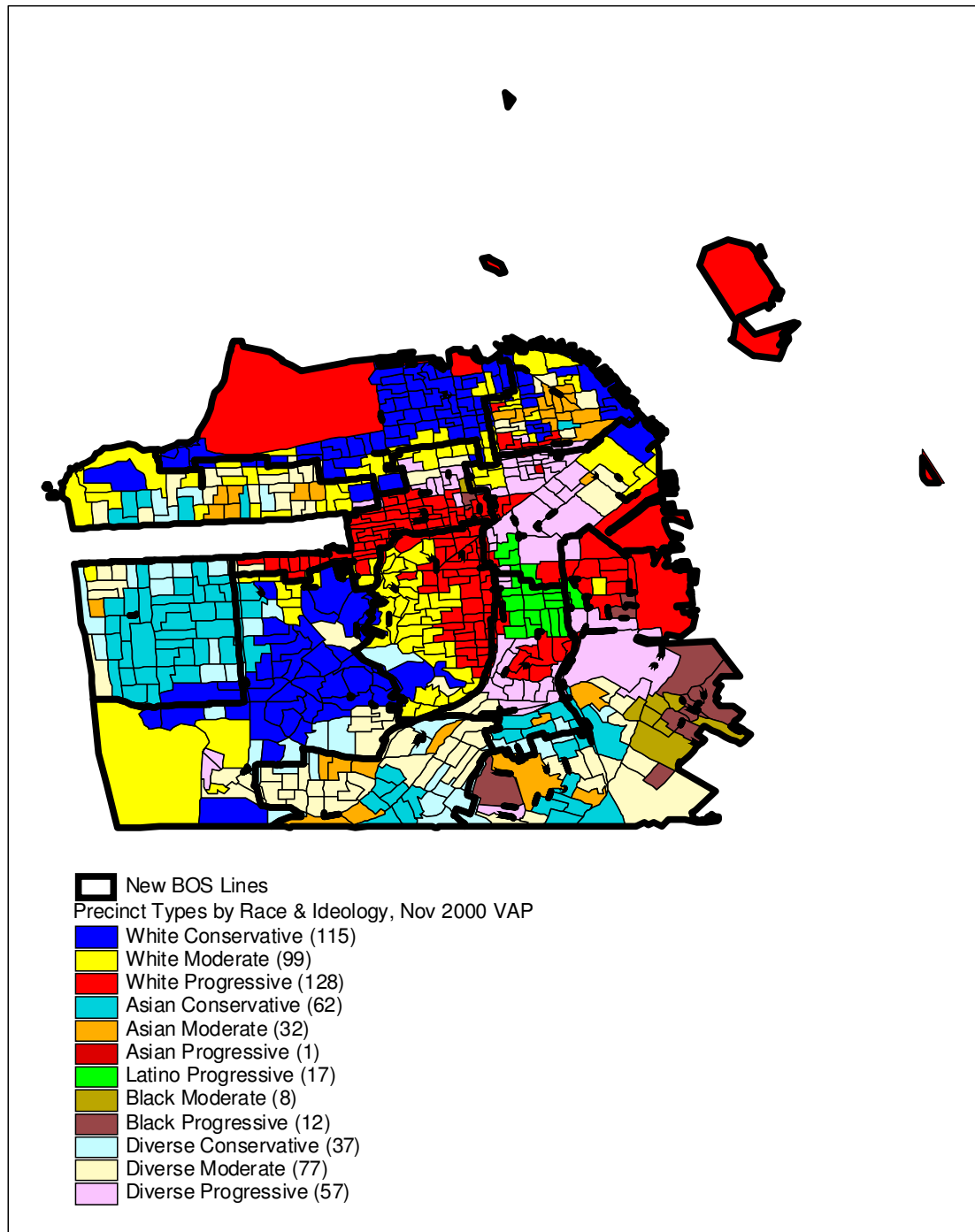
Results:

TABLE 1: Frequency Distribution of SF Precincts by Type

Type	Freq.	Percent	Description
WC	115	17.80	White Conservative
WM	99	15.33	White Moderate

	WP	129	19.97	White Progressive
	AC	62	9.60	Asian Conservative
	AM	32	4.95	Asian Moderate
	AP	1	0.15	Asian Progressive
Conservative	LC	0	0.00	Latino
	LM	0	0.00	Latino Moderate
	LP	17	2.63	Latino Progressive
	BC	0	0.00	Black Conservative
	BM	8	1.24	Black Moderate
	BP	12	1.86	Black Progressive
Conservative	DivC	37	5.73	Diverse
	DivM	77	11.92	Diverse Moderate
Progressive	DivP	57	8.82	Diverse
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	Total	646	100.00	

Map of Race & Ideology Precinct Types (San Francisco Precincts)



See following **Data Appendix for Studies #1 and #2** for precinct scores on the PVI & RDI and race-ideology type classification codes.

Data Appendix for Studies #1 and #2

Precinct	NewPVI	RDI	Type
2001	39	68	DivC
2002	46	62	AM
2003	43	60	AM
2004	30	60	AC
2005	41	59	AC
2006	29	59	AC
2007	29	58	AC
2008	41	56	AC
2009	34	58	AC
2011/2012	44	65	DivM
2013	36	60	AC
2015	38	64	DivC
2016/2014	29	67	DivC
2017	42	68	DivM
2018	39	68	DivC
2019	44	63	AM
2020	38	67	DivC
2021	55	65	DivM
2022	43	65	DivM
2023	46	66	DivM
2024	41	68	DivC

2025	50	67	DivM
2026	46	67	DivM
2027	34	69	DivC
2028	33	65	DivC
2029	32	66	DivC
2031	56	68	DivM
2032	49	69	DivM
2033	52	69	DivM
2034	47	69	DivM
2035	36	62	AC
2036	37	60	AC
2037	30	61	AC
2038	45	64	AM
2039	39	55	AC
2040	75	69	DivP
2041	25	69	DivC
2042	39	65	AC
2043	33	68	DivC
2044	73	55	BP
2045	22	65	DivC
2046	46	74	DivM
2047	42	64	AC
2048	25	64	AC

2049	49	70	DivM
2050	42	60	AM
2051	45	67	DivM
2052	45	72	DivM
2053	42	60	AM
2054	36	54	AC
2055	31	54	AC
2057/2056	46	68	DivM
2058	58	70	DivM
2059	37	50	AC
2101	14	47	WC
2102	14	38	WC
2103/2105	23	36	WC
2104	42	55	WC
2106	52	55	WM
2107	37	52	WC
2108	43	25	WM
2109	37	53	WC
2112	36	26	WC
2113	42	52	WC
2114	13	36	WC
2115	25	26	WC
2116	24	29	WC

2117	27	18	WC
2119	51	56	WM
2120/2118	29	23	WC
2121	48	56	WM
2122	35	58	WC
2123	43	56	WM
2124	43	62	DivM
2125	43	57	WM
2126	37	57	AC
2127	37	54	AC
2128	34	57	AC
2129	42	58	DivM
2131	42	56	DivC
2132	42	57	DivM
2133	37	55	DivC
2134	52	56	WM
2135	41	58	DivC
2136	35	55	AC
2137	48	57	WM
2138	49	58	DivM
2139	47	58	DivM
2141	42	55	AM
2142	44	54	AM

2143	42	58	DivM
2144	49	54	WM
2145	46	57	AM
2146	45	56	AM
2147	39	53	AC
2148	48	57	WM
2149	44	58	DivM
2151	44	55	WM
2152	55	56	WM
2153	54	58	DivM
2154	23	57	DivC
2155	53	58	DivM
2156	53	57	DivM
2157	48	54	WM
2158/2111	56	57	DivM
2159	59	58	DivM
2161	49	58	DivM
2162	53	55	AM
2163	51	57	AM
2164	61	57	DivM
2165	52	57	DivM
2166	53	56	WM
2201	37	47	WC

2202	31	36	WC
2203	44	56	WM
2204	43	55	WM
2205	56	49	WM
2206	58	58	WM
2208	42	58	WM
2209/2207	52	59	WM
2211	59	55	WM
2212	33	51	WC
2213	66	67	DivP
2214	40	57	WC
2215	86	45	WP
2216	85	55	WP
2301	35	62	DivC
2302	62	58	WM
2303	52	59	DivM
2304	48	59	DivM
2306/2305	43	60	DivM
2307	53	60	DivM
2308	45	58	AM
2309	28	51	AC
2311	24	48	AC
2312	18	47	AC

2313	31	61	DivC
2314	34	56	AC
2315	20	52	AC
2316	24	56	AC
2317	35	61	DivC
2318	27	58	DivC
2319	25	55	DivC
2321	18	56	AC
2322	17	54	AC
2323	23	52	AC
2324	28	50	AC
2325	32	52	AC
2326	37	57	AC
2327	40	58	DivC
2328	58	58	DivM
2329	39	56	AC
2331	27	53	AC
2332	25	50	AC
2333	29	56	AC
2334	24	54	AC
2335	26	54	AC
2336	18	54	AC
2337	43	59	DivM

2338	36	61	DivC
2339	28	52	AC
2341	28	52	AC
2342	24	52	AC
2343	21	56	AC
2344	31	58	AC
2345	16	54	AC
2346	30	56	AC
2347	16	53	AC
2348	17	54	AC
2349	21	54	AC
2351	21	55	AC
2352	19	56	AC
2353	28	57	AC
2354	18	55	WC
2355	21	55	AC
2356	38	57	DivC
2357	37	56	AC
2358	26	57	DivC
2359	23	59	DivC
2361	31	58	WC
2401	64	54	WP
2402	60	60	DivM

2403	49	54	WM
2404	66	54	WP
2405	56	56	WM
2406	75	55	WP
2407	78	55	WP
2408	73	51	WP
2409	64	57	WP
2411	77	47	WP
2412	53	54	WM
2413	76	53	WP
2414	76	54	WP
2415	60	45	WM
2416	50	56	WM
2417	52	56	WM
2418	47	54	WM
2419	42	51	WM
2501	27	56	AC
2502	33	56	WC
2503	21	54	AC
2504	15	57	DivC
2505	26	57	DivC
2506	18	53	WC
2507	19	55	WC

2508	14	45	WC
2509	35	59	WC
2512/2511	27	53	WC
2513	16	59	WC
2514	21	53	WC
2515	63	68	DivM
2516	20	52	WC
2517	27	56	AC
2518	24	56	WC
2519	19	47	WC
2521	27	48	WC
2522	12	44	WC
2523	21	53	WC
2524	18	51	WC
2525	23	48	WC
2526	0	43	WC
2527	4	46	WC
2528	15	47	WC
2529	13	50	WC
2530	26	51	WC
2531	27	52	WC
2532	4	53	WC
2533	34	61	WC

2534	21	50	WC
2536/2535	31	57	WC
2537/2539	7	53	WC
2538	5	48	WC
2541	11	55	WC
2542	10	57	DivC
2543	23	63	WC
2544	15	46	WC
2545	29	62	WC
2546	32	67	DivC
2547	28	61	DivC
2548	20	51	WC
2549	32	66	DivC
2551	53	64	DivM
2552	48	67	DivM
2553	48	65	DivM
2554	55	68	DivM
2601	24	60	DivC
2602	50	54	WM
2603	43	41	WM
2604	59	42	WM
2605	58	51	WM
2606	25	61	WC

2607	36	62	WC
2608	52	70	DivM
2609	60	48	WM
2611	57	60	WM
2612	53	62	WM
2701	53	45	WM
2702	60	53	WM
2703	58	47	WM
2704	62	40	WM
2705	63	52	WP
2706	81	69	DivP
2707	86	64	DivP
2708	80	67	DivP
2709	75	72	DivP
2711	70	73	DivP
2712/2713	72	75	DivP
2714	73	75	DivP
2801	54	64	WM
2802	1	56	WC
2804/2803	5	54	WC
2805	8	56	DivC
2806	2	55	WC
2808/2807	53	65	WM

2809	63	65	DivP
2811	79	66	DivP
2812	60	66	DivM
2813	61	63	DivM
2814	53	62	WM
2815	61	64	DivM
2816	17	39	WC
2901	43	69	DivM
2902	45	67	DivM
2903	38	66	DivC
2904	50	71	DivM
2905	50	66	DivM
2906	47	66	DivM
2907	50	69	DivM
2908	42	70	DivC
2909	47	67	AM
2912/2911	47	64	AM
2913	44	60	AM
2914	44	71	DivM
2915	44	68	DivM
2916	51	74	DivM
2917	49	70	DivM
2918	49	71	DivM

2919	47	71	DivM
3000	67	39	BP
3001/3002	68	70	DivP
3003	69	57	BP
3004	70	53	BP
3005	74	43	BP
3006	44	64	AM
3007	57	70	DivM
3008	63	68	DivP
3009	47	69	DivM
3011	62	66	BM
3012	59	54	BM
3013	59	55	BM
3014	51	65	BM
3015	63	46	BP
3016	61	54	BM
3017	66	14	BP
3018	62	49	BM
3019	76	44	BP
3021	31	46	AC
3022	39	70	DivC
3023	51	69	DivM
3024/3025	59	65	BM

3026	46	69	DivM
3027	54	71	DivM
3028	69	57	BP
3029	52	72	DivM
3031	41	50	AC
3101	72	44	WP
3103/3102	17	28	WC
3104	13	23	WC
3105	21	28	WC
3106	24	32	WC
3107	20	27	WC
3108	23	19	WC
3109	12	15	WC
3111	14	20	WC
3112	26	25	WC
3113	26	25	WC
3114	39	26	WC
3115	50	40	WM
3117/3116	43	35	WM
3118	31	35	WC
3121/3119	19	24	WC
3122/3125	16	25	WC
3124	21	26	WC

3126	33	32	WC
3127	32	37	WC
3128	19	23	WC
3129	24	31	WC
3131/3123	34	25	WC
3132	27	24	WC
3133	30	28	WC
3134	23	29	WC
3135	34	28	WC
3136	25	24	WC
3137	48	41	WM
3138	29	30	WC
3139	45	50	WM
3141	49	52	WM
3142	69	14	WP
3143	35	31	WC
3144	32	28	WC
3145	31	28	WC
3146	40	37	WC
3147	47	35	WM
3148	23	30	WC
3149	32	35	WC
3151	25	28	WC

3152	40	35	WC
3153	21	25	WC
3154	33	26	WC
3155	40	35	WC
3156	42	38	WC
3157	43	37	WM
3158	44	30	WM
3161/3159	49	51	WM
3162	39	53	WC
3163	46	55	WM
3164	51	59	WM
3165	49	53	WM
3166	27	37	WC
3168	47	25	WM
3169	37	23	WC
3171/3167	29	27	WC
3172	39	50	WC
3173	42	33	WM
3174	29	42	WC
3175	42	29	WM
3176	41	48	WC
3202/3201	58	62	WM
3203	50	54	WM

3204	37	43	WC
3205	52	54	DivM
3206	52	51	WM
3207	44	40	WM
3208	29	34	WC
3209	42	39	WC
3211	66	51	WP
3212	46	41	WM
3213	50	52	WM
3214	48	54	AM
3215	49	51	AM
3216	59	57	DivM
3217	55	56	DivM
3218	33	45	WC
3219	28	50	WC
3221	49	52	AM
3222	50	55	WM
3223	48	58	DivM
3224	50	49	AM
3225	45	43	AM
3226	44	35	AM
3227	44	50	AM
3228	23	42	WC

3229	58	50	AM
3231	55	22	AM
3232	59	16	AM
3233	60	54	AM
3234	58	57	DivM
3235	43	9	AM
3236	47	22	AM
3237	38	41	AC
3238	60	58	DivM
3239	72	57	WP
3241	78	73	DivP
3242	80	68	DivP
3243	70	67	DivP
3244	76	70	DivP
3245	74	56	WP
3246	62	57	WM
3247	66	60	DivP
3248	69	60	WP
3249	80	61	WP
3251	77	55	WP
3252	83	63	WP
3253	75	70	DivP
3254	68	71	DivP

3255	77	72	DivP
3256	78	74	DivP
3257	73	72	DivP
3258	34	36	WC
3259	40	45	WC
3261	58	55	WM
3262	40	49	WC
3263	70	49	WP
3264	72	59	WP
3265	66	56	WP
3266/3268	64	62	DivP
3267	80	66	DivP
3269	71	73	DivP
3271/3277	66	73	DivP
3272	66	67	AP
3273/3275	77	73	DivP
3274	78	74	DivP
3276	59	60	DivM
3278	60	60	AM
3279	35	44	WC
3300	71	68	DivP
3301	49	54	WM
3302	69	69	DivP

3303	53	55	WM
3304	56	66	DivM
3305	61	69	DivM
3306	69	70	DivP
3308	81	60	WP
3309	84	70	DivP
3310	77	67	DivP
3311	77	67	DivP
3312	72	66	DivP
3313/3307	60	62	BM
3314	56	59	WM
3315	89	53	WP
3316	87	51	WP
3317	71	61	WP
3318	86	49	WP
3319	77	58	BP
3320	77	66	DivP
3321	67	72	DivP
3322	92	58	WP
3323	89	56	WP
3324	94	54	WP
3325	87	48	WP
3326/3340	81	60	BP

3327	85	61	WP
3328	89	62	WP
3329	87	51	WP
3331	86	47	WP
3332	91	49	WP
3333	92	51	WP
3334	72	39	WP
3335	95	51	WP
3336	96	54	WP
3337	96	52	WP
3338	91	48	WP
3339	96	56	WP
3341	86	43	WP
3342	94	50	WP
3401	77	72	DivP
3402	76	69	DivP
3403	65	74	DivP
3404	85	74	DivP
3405	67	75	DivP
3406	81	71	DivP
3407	60	61	DivM
3408	60	61	WM
3409	52	66	DivM

3410	52	53	AM
3411	50	51	WM
3412	36	50	WC
3413	44	49	WM
3414	71	52	WP
3501	81	55	WP
3502	95	54	WP
3503	77	44	WP
3504	83	53	WP
3505	77	55	WP
3506	88	42	WP
3507	95	39	WP
3508	83	39	WP
3509	98	38	WP
3511	82	35	WP
3512	92	38	WP
3513	91	41	WP
3514	81	48	WP
3515	75	49	WP
3516	81	37	WP
3517	68	47	WP
3518	87	33	WP
3519	81	31	WP

3521	68	36	WP
3522	60	28	WM
3523	63	37	WP
3524	62	33	WM
3525	55	24	WM
3526	58	29	WM
3601	66	38	WP
3602	59	31	WM
3603	44	27	WM
3604	63	34	WP
3605	49	24	WM
3606	58	33	WM
3607	85	36	WP
3609	87	33	WP
3610/3613	92	48	WP
3611	88	46	WP
3612/3608	75	35	WP
3614	82	53	WP
3615	81	46	WP
3616	60	32	WM
3617	47	32	WM
3618	67	35	WP
3621	60	32	WM

3622/3619	62	31	WM
3623	66	36	WP
3624	66	32	WP
3625	79	39	WP
3626	67	41	WP
3627	69	36	WP
3628	52	31	WM
3629	83	50	WP
3631	64	29	WP
3702	96	67	DivP
3703/3701	85	52	WP
3704	86	73	DivP
3705	79	59	WP
3706	100	63	WP
3707	82	70	DivP
3708	90	64	LP
3709	81	60	LP
3710	92	64	WP
3711	85	67	DivP
3712	95	47	WP
3713	93	68	DivP
3714	93	45	WP
3715	98	65	DivP

3716	100	66	DivP
3717	89	61	LP
3718	76	37	WP
3719	84	59	LP
3720	93	56	WP
3721	91	52	WP
3722	91	53	WP
3723	90	61	LP
3724	95	57	LP
3725	87	58	LP
3726	80	64	WP
3727	82	64	LP
3728	83	54	LP
3729	85	52	LP
3731	71	47	WP
3732	73	55	WP
3733	92	62	WP
3734	93	61	LP
3735	95	58	LP
3736	93	52	LP
3737	83	44	LP
3739	91	54	LP
3741	81	56	LP

3742	81	59	LP
3743	82	64	DivP
3801	69	41	WP
3802	73	44	WP
3803	74	35	WP
3804	67	30	WP
3805	59	34	WM
3806	69	48	WP
3808/3807	73	47	WP
3810	70	53	WP
3812/3811	67	68	DivP
3813/3809	76	60	BP
3814	75	48	WP
3899	66	57	WP
3901	55	50	WM
3902	54	40	WM
3903	53	46	WM
3904	51	32	WM
3905	57	27	WM
3906	58	31	WM
3907/3908	55	33	WM
3909/3916	58	29	WM
3911	51	33	WM

3912	61	33	WM
3913	66	41	WP
3914	63	35	WM
3915	64	39	WP
3917/3918	67	35	WP
3919/3921	64	34	WP
3922	80	39	WP
3923	68	44	WP
3924	65	36	WP
3925	65	40	WP
3926	65	42	WP
3927	69	44	WP
3928	70	50	WP
3929	70	51	WP
3931	78	54	WP
3932	69	53	WP
3933	81	68	DivP
3934	90	63	DivP
3935	79	50	WP
3936/3738	80	63	WP
3937	72	60	WP
3938	77	59	WP
3939	90	66	DivP

3941	75	43	WP
3942	86	59	WP
3943	79	65	WP
3944	65	71	DivP