

## Vehicle Speed / RPM Correlation Calculator

### 6MT Ratios from BRZ Service

[Link to BRZ Service Manual](#)

Gear	Trans Ratio (Engine Rev per Drive shaft Rev)	Rear End Reduction Ratio	Final Ratio (Engine Rev / Tire Rev)
1	3.626	4.100	14.867
2	2.188		8.971
3	1.541		6.318
4	1.213		4.973
5	1.000		4.100
6	0.767		3.145

### Tire Type: 215/45 R17

Value of Pi	Tire Width (mm)	Wall Height (ratio)	Rim Diameter (inch)	Tire Diameter Calculate (inch)	Tire Diameter Mfr Spec (inch)	Revolutions per Mile Mfr Spec (N)	Rollout based on Tire Size (inch)	Rollout based on Mfr Diam (inch)	Rollout based on Mfr Rev Per Mile
3.14159	215	0.45	17.00	24.62	24.7	844	77.34	77.60	75.07

[Link to Michelin Primacy HP](#)

### Tire Revs (RPM)

RPM	Gear 1	Gear 2	Gear 3	Gear 4	Gear 5	Gear 6
1000	67	111	158	201	244	318
2000	135	223	317	402	488	636
3000	202	334	475	603	732	954
4000	269	446	633	804	976	1272
5000	336	557	791	1005	1220	1590
6000	404	669	950	1206	1463	1908
7000	471	780	1108	1408	1707	2226
7400	498	825	1171	1488	1805	2353
8000	538	892	1266	1609	1951	2544

### Vehicle Speed (mph)

RPM	Gear 1	Gear 2	Gear 3	Gear 4	Gear 5	Gear 6
1000	5	8	11	14	17	23
2000	10	16	23	29	35	45
3000	14	24	34	43	52	68
4000	19	32	45	57	69	90
5000	24	40	56	71	87	113
6000	29	48	68	86	104	136
7000	33	55	79	100	121	158
7400	35	59	83	106	128	167
8000	38	63	90	114	139	181

### Vehicle Speed (km/hr)

RPM	Gear 1	Gear 2	Gear 3	Gear 4	Gear 5	Gear 6
1000	8	13	18	23	28	36
2000	15	26	36	46	56	73
3000	23	38	54	69	84	109
4000	31	51	72	92	112	146
5000	38	64	91	115	140	182
6000	46	77	109	138	167	218
7000	54	89	127	161	195	255
7400	57	94	134	170	206	269
8000	62	102	145	184	223	291

### Engine RPM a function of Speed (mph)

mph	Gear 1	Gear 2	Gear 3	Gear 4	Gear 5	Gear 6
5	1,046	631	444	350	288	221
10	2,091	1,262	889	700	577	442
15	3,137	1,893	1,333	1,049	865	664
20	4,182	2,524	1,777	1,399	1,153	885
25	5,228	3,155	2,222	1,749	1,442	1,106
30	6,274	3,786	2,666	2,099	1,730	1,327
35	7,319	4,417	3,111	2,449	2,019	1,548
40	8,365	5,048	3,555	2,798	2,307	1,769
45		5,679	3,999	3,148	2,595	1,991
50		6,309	4,444	3,498	2,884	2,212
55		6,940	4,888	3,848	3,172	2,433
60		7,571	5,332	4,197	3,460	2,654
65		8,202	5,777	4,547	3,749	2,875
70			6,221	4,897	4,037	3,096
75			6,666	5,247	4,326	3,318
80			7,110	5,597	4,614	3,539
85			7,554	5,946	4,902	3,760
90			7,999	6,296	5,191	3,981
95				6,646	5,479	4,202
100				6,996	5,767	4,424
105				7,346	6,056	4,645
110				7,695	6,344	4,866
115				8,045	6,632	5,087
120					6,921	5,308
125					7,209	5,529
130					7,498	5,751
135					7,786	5,972
140					8,074	6,193
145						6,414
150						6,635
155						6,856
160						7,078

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