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E46fanatics.com **BMW Parts Catalog** 

## **Gear Ratio Calculator**

This calculator is for finding your maximum speed for each gear. You can either enter the values manually or use the presets on the right. The presets on the right only change the Transmission Ratios, Final Drive Ratio and Engine Redline for the specific models. You you need to enter in your tire size, the E46 Profiles do not change it. These are specifications for US cars only. Other countries have different ratios for the same car. This will also calculate your highway cruising engine RPMs for a given speed.

Reset Wheel Size	Calculate	Select an E46 Profile. Clicking on the model changes the Transmission Ratio, Final Drive Ratio and the Engine Redline (Does not update Tire Size)
Tire Width (in mm) [Example: (225 / 45 - 17)]	225	- Default Manual Gear Ratios
Tire Aspect Ratio [Example: (225 / 45 - 17)]	45	323i 323ci 323ci 323iT
Wheel Size (in inches) [Example: (225 / 45 - 17)]	17	328i 328ci
Transmission Ratios		325i 325ci 325cic 325iT 325xi/T
1st Gear	4.21	330i 5spd 330ci 5spd 330cic 5spd
2nd Gear	2.49	330xi 5spd
3rd Gear	1.66	330i 6spd 330ci 6spd 330cic 6spd
4th Gear	1.24	330xi 6spd
5th Gear	1.00	330i ZHP 330cic ZHP 330cic ZHP
	1.00	M3 / M3 convertible
6th Gear		- Default Automatic Gear Ratios
Final Drive Ratio	3.91	323i/ 325i/ 328i All Models
Engine Redline RPM	7000	330i All Models (except ZHP)
Max Speed in each Gear	MPH at Redline	330i ZHP All Models  Tire Sizes
Max Speed in 1st Gear	31.59	225 / 45 - 17 245 / 40 - 17 225 / 40 - 18
Max Speed in 2nd Gear	53.42	255 / 35 - 18 255 / 40 - 18 255 / 35 - 19
Max Speed in 3rd Gear	80.12	Select Different Final Drive
Max Speed in 4th Gear	107.26	E46 Ratios (non M3)
Max Speed in 5th Gear	133.01	2.93     3.07     3.15     3.23     3.38       3.46     3.64     3.73     3.91
Max Speed in 6th Gear		E46 M3 Ratios * 3.91 and 4.10 are aftermarket
Calculate your RPMs based upon your Cruising Speed		3.62 *3.91 *4.10
		Select Different Redline
Cruising Speed (Enter speed you drive on the HWY)	70 MPH	6500 RPM - Standard E46
Engine RPM at Cruising Speed	3684 RPM	6800 RPM - E46 330i ZHP
Reset	Calculate	7000 RPM - Software Upgraded
		8000 RPM - E46 M3

<sup>\*</sup> These results are based on mathematical formulas. Your actual speed may vary. Top speeds are theoretical. I am not responsible for any inaccuracies provided in these calculations. They are only provided for entertainment / informational purposes.

E-mail me questions / comments / or corrections to my info.