TRANS-01, Speedometer, Gear Ratio, and Tire Size Calculator

These calculations will not only help you determine your speedometer error, but will also help you determine your maximum speed in any gear for a given gear set. This can be particularly useful if you are considering changing to a transaxle with a different set of gears or to a different ring a pinion. It can also be used to determine how different wheel and tire size combinations will affect your speedometer. If you are trying to verify the accuracy of your speedometer, you should be confident that your tachometer is indicating correctly. If you doubt the accuracy of your tachometer, obtain a strobotach / stroboscope and check it or have a speedometer shop check it for you. You will also need to determine your gear sizes, final drive ratio, tire size, and wheel diameter to plug into the program. If you have an owner's manual, the gear sizes and final drive ratio will be listed there. For the tire and wheel size, simply look on the side of tires on your drive wheels (i.e. for a rear wheel drive car, look at the rear tires). Here's and example of how it will be listed and what each part means:

For a car with 225/50VR16 tires:

Tread Width	225 mm
Aspect Ratio	50
Wheel Diameter	16 in.

Note: Aspect Ratio is used to determine the height of the sidewall in terms of percent of tread width. For the example given, the height of the sidewall is 50% of the tread width or 112.5 mm.

Some Web Browsers may have trouble running the form programs below. If so, you may perform the calculations yourself using the equations on the formula page.

Tire Circumference Calculator	

Enter Tread Width (mm):	
Enter Aspect Ratio:	
Enter Wheel Diameter (in.):	
Clear Form	INCHES

To determine your speedometer error, simply calculate several "theoretical" speeds at different Engine RPMs in the same gear. Use RPMs that are easily readable on your

tachometer. Then take your car for a drive and record your "indicated" speedometer readings in the same gear and at the same RPMs as you used in the calculation. By graphing one line for your "calculated" speed and another for your "indicated" speed, you can trend your speedometer error over the entire range of that particular gear.

Speed Calculator

Enter Engine RPM:	
Enter Tire Circumference:	
Enter Final Drive Ratio:	
Enter Gear Ratio:	
Clear Form	MPH

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