

The TYREing Trip from Melbourne to Perth

A tyre manufacturer was testing two new tyre designs by driving two test cars identical in all respects except tyre design from Melbourne to Perth.



The diameters of the tyres were identical when fitted (both had a diameter of $25\frac{3}{8}$ inches at the start of the trial).

The cars were to travel from Melbourne to Perth by exactly the same route and to maintain the same speed at all times during the trip. The aim of the test was to see which tyre design resulted in less tyre wear over the course of the trial.

During the trial a communication error caused one driver (car B) to take the wrong route to Perth. This car drove a total of 4135 km on its journey which was $\frac{1}{5}$ longer than the distance traveled by Car A which took the designated route.

At the end of the trip the tyre diameters of both cars were measured again with the following results: car A diameter = 645.9mm; car B = 642.5mm.

Tyre manufacturers express tyre performance as percentage decrease in diameter per 1000km road contact (which means how many kilometres any one bit of the tyre was in contact with the road).

Calculate tyre performance for each car to determine which tyre design resulted in better tyre performance.