

# Scientist creates formula for perfect parking

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$$\sqrt{(r^2 - \ell^2) + (\ell + k)^2} - (\sqrt{r^2 - \ell^2} - w)^2 - \ell - k,$$

Fig. 1:

- $r$  = radius of your car's curb to curb turning circle
- $\ell$  = your car's wheel base – the distance between the centres of the front wheel and the corresponding back wheel
- $k$  = the distance from the centre of the front wheel to the front of your car
- $w$  = the width of the parked car next to your car
- The formula gives the minimum extra length the parking space needs to be, over the length of your car

(PhysOrg.com) -- Forget roasting a textbook turkey or perfect present-wrapping this month. The real test of Britons' mettle will come as we try to park in tight spots on busy roads, with 35 million of us heading to the shops over the next few weeks. Help, however, is at hand, as Professor Simon Blackburn, from Royal Holloway, University of London, has collaborated with Vauxhall Motors to create a mathematical formula to show motorists how to park perfectly.

The report on the mathematics of [parking](#) was created after research revealed that over half (57%) of Britons lack confidence in their parking ability and a third (32%) would rather drive further from their destination or to a pricier car park, purely to avoid manoeuvring a tricky space.

Professor Blackburn says, "Parking the car is something that most of us do on a daily basis - and we all get a little frustrated with it sometimes. This was the perfect opportunity to show how we can apply mathematics to understanding something that we all share."

He adds, "The formula and our advice can help people understand what good parallel parking involves. Everyone has had the experience of ignoring a space because you're not sure if you can fit in or not. This formula solves that problem."

Professor Blackburn demonstrates the geometry of a seamless park, based on a car's wheel-base, and the minimum length of the space as calculated by the formula (above). The formula begins by using the radius of a car's turning circle and the distance between the vehicle's front and back wheels.

Then, using the length of the car's nose and the width of an adjacent car, the [formula](#) can tell exactly how big a space needs to be for your car to fit. By applying this to basic parking guidelines, you can work out exactly when to turn the [steering wheel](#) to slide in perfectly.

Simon Ewart, from Vauxhall Motors, comments, "For most of us, the best part of being behind the wheel is usually the driving! But as we found that half of Britons try more than one spot in their efforts to park, and one in ten of them switch spaces five or more times, there's no escaping the fact that parking can be challenging for the best of drivers. Hopefully this report proving that it is possible will give people the confidence to try."

More information: The full report is available to view on [www.ma.rhul.ac.uk/sblackburn](http://www.ma.rhul.ac.uk/sblackburn)

Provided by Royal Holloway, University of London

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