

Stopping Distances:

Paper and Video:

Two cars Blue at 70 MPH is Passed by Red going 100 MPH – Both slam on brakes. Blue car stops – Red Crashes. How fast is Red car going?

<https://www.roadandtrack.com/new-cars/car-technology/a15392774/it-takes-nearly-twice-as-long-to-stop-from-80-mph-vs-60-mph-heres-why/>



Calculate kinetic energy in arbitrary units.

A YouTube video player interface for a video titled "Calculating a Car Crash - Numberphile". The video displays the following calculations for kinetic energy in arbitrary units:
$$KE_{blue} = \frac{1}{2} m v^2$$
$$= \frac{1}{2} m (70)^2 = 4900$$
$$KE_{red} = \frac{1}{2} m (100)^2 = 10,000$$
$$10,000 - 4900$$
The video player includes standard controls like play, volume, and a progress bar.

Result: At crash Red car is going - ??

The image shows a YouTube video player with a brown background. The video title is "Calculating a Car Crash - Numberphile". The video content displays the following calculations:

$$KE \text{ blue} = \frac{1}{2} m v^2$$
$$= \frac{1}{2} m (70)^2 = 4900$$
$$KE \text{ red} = \frac{1}{2} m (100)^2 = 10,000$$
$$10,000 - 4900 = 5100$$
$$\sqrt{5100} = 71.41$$

The video player interface includes a play button, a volume icon, a progress bar showing 5:48 / 8:24, and icons for closed captions, settings, YouTube, and a full screen button. A "MORE VIDEOS" button is also visible on the left.

Loss in KE indicates 71MPH at crash!!

Speed, speed limits and stopping distances - Paper

<http://www.brake.org.uk/facts-resources/15-facts/1255-speed>

Speed and mass are the properties of energy exchanged in a road collision in the form of kinetic energy, the level of energy exchanged has a significant impact on the severity of the crash. It is believed that the exchanged of energy can be calculated equal to half the vehicle's mass times the vehicle speed squared; which means that even smaller increases in speed can lead to an increase in impact severity.

$$\frac{1}{2} m v^2$$

