

NAME: _____

Crash Reconstruction: Stopping Distance

In order to become a crash reconstructionist with the State Police you must go through several months of training and pass a series of tests.

1. Watch <https://youtu.be/PcBLDlLgjk>
What do you notice about speed and stopping distance?

2. Using data shared by the U.S. Department of Transportation, found in the chart below, retrieved from https://safety.fhwa.dot.gov/ped_bike/ped_transit/ped_transguide/ch4.cfm, answer the following:

- a) Create a quadratic regression equation to model the data where x represents speed and y represents stopping distance.

SPEED (mph)	STOPPING DISTANCE (ft)
30	46
40	80
50	122

- b) In Illinois, school zones have a speed limit of 20 mph on school days when students are present. What is the stopping distance of a car when traveling 20 mph?

3. Many interstates have a work zone speed limit of 45 mph. Unlike school zones, workers do not need to be present for a motorist to receive a ticket. At a work zone crash scene, you measure skid marks of a vehicle indicating a stopping distance of 180 feet. Use the quadratic equation from #2a, to determine:

- a) How fast was the motorist traveling?

- b) How much over the speed limit was the driver traveling?