

DRIVER'S EDUCATION 101

In just a few short years, you are going to have an opportunity to get your driver's license. So that the only time we meet is while we are at school and not by "accident", you are being asked to learn about stopping distances of a motor vehicle. The formula used to calculate this is $d = 0.05x^2 + x$, where d = stopping distance in feet and x = speed in mph.



Complete the following questions:

1. Based upon the equation, what type of graph do you expect this to be when located on a coordinate plane?
2. If you were asked to graph this equation on a coordinate plane, based upon the context of the formula, which quadrants would be appropriate to include in the graph? Explain your reasons for excluding and including those quadrants.
3. Tell whether the parabola opens up or down. What part of the equation provides you with that information?
4. Make a graph of this formula, as it applies to motor vehicles, covering speeds up to 75 mph.
5. If you are traveling 50 mph., how many feet would it take for your vehicle to come to a stop?
6. School busses have signs on the back that read, "Keep Back 100 Feet". What is the maximum approximate speed you should be traveling in order to safely follow the bus?
7. If you are on the highway traveling the speed limit (65 MPH), what is your stopping distance?
8. What other factors besides speed do you think will affect the stopping distance of a motor vehicle? Name as many as you can think of.