Real Life Applications of Radical Functions:

The formula S(d)=$\sqrt{30 d }$ estimates the speed of a vehicle on Main Street when the pavement is dry based on the distance of its skid marks.

S(d) represents the speed of the car in mph

d=the distance the car skid in feet

If the pavement on Main Street is wet, the formula is: S(d)=$\sqrt{15 d }$.

1. If a 150 ft skid mark is left by a car involved in an accident on a dry day, what was the estimated speed of the vehicle?
2. If the speed limit on Main Street was 60 mph, was the car speeding at the time of the accident?
3. What length of skid mark would be left on Main Street on a rainy day for a car going at the speed limit?
4. In dry conditions, would a car that leaves a 100-foot skid mark be travelling twice as fast as a car that leaves a 50 foot skid mark? Justify your answer?
5. Fill out the tables below for skid distance vs. speed for both wet and dry pavement and then graph your results on the same graph.

Dry Pavement:

|  |  |
| --- | --- |
| Speed in Mph | Skid Distance in Feet |
| 30 |  |
| 40 |  |
| 50 |  |
| 60 |  |
| 70 |  |
| 80 |  |

Wet Pavement:

|  |  |
| --- | --- |
| Speed in Mph | Skid Distance in Feet |
| 30 |  |
| 40 |  |
| 50 |  |
| 60 |  |
| 70 |  |
| 80 |  |



If you had to give a speech to a driver’s education class about how the skid distances is affected by road conditions based on your data, what would you tell them and why?