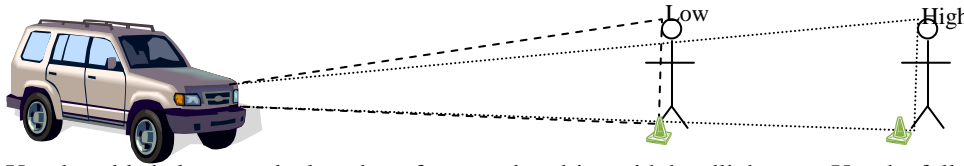


# HIGH BEAM, LOW BEAM HOMEWORK

At what speed do you drive faster than your headlights? This activity will allow you to determine the safest speed to drive at night. Use the car you will be driving at home. At night, sit in the front seat with the low beam headlights on. Have another person in front of the car and have them move away from the front of the car. Once you can't see them in the headlights have them mark their position. Do the same with the high beams on. Measure the distance from the car to each marker.



Use the table below to calculate the safest speed to drive with headlights on. Use the following formula to calculate your optimum speed.

$$\frac{\text{Closest Chart Dist.}}{\text{MPH}} = \frac{\text{Measured Dist.}}{\text{Optimum Speed}}$$

Example:  $\frac{209 \text{ ft}}{45 \text{ mph}} = \frac{215 \text{ ft}}{x}$  Cross multiply to find x  $\frac{45 * 215}{209x} = 46 \text{ mph}$

## Stopping Distance

| M.P.H. | Perception | Reaction | Stopping | Total |
|--------|------------|----------|----------|-------|
| 20     | 22         | 22       | 22       | 66    |
| 25     | 27         | 27       | 36       | 90    |
| 30     | 33         | 33       | 49       | 115   |
| 35     | 38         | 38       | 68       | 144   |
| 40     | 44         | 44       | 87       | 175   |
| 45     | 49         | 49       | 111      | 209   |
| 50     | 55         | 55       | 135      | 245   |
| 55     | 60         | 60       | 164      | 284   |
| 60     | 66         | 66       | 193      | 325   |
| 65     | 71         | 71       | 229      | 371   |
| 70     | 77         | 77       | 265      | 419   |
| 75     | 82         | 82       | 315      | 479   |

### Low Beam Calculations

Measured Distance \_\_\_\_\_ ft

Low Beam Answer

### High Beam Calculations

Measured Distance \_\_\_\_\_ ft

High Beam Answer