

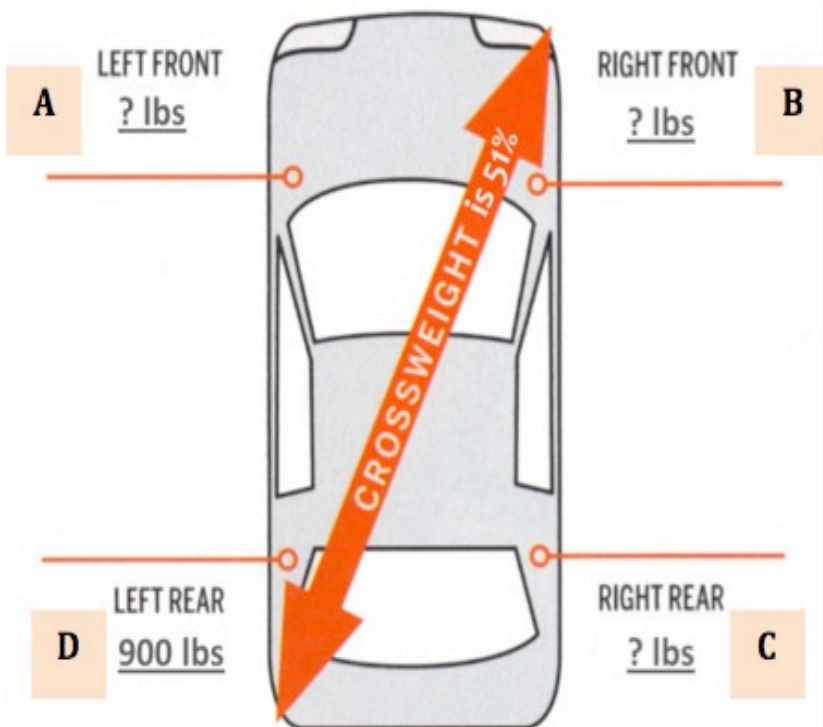
Name _____

Date _____

Weight Wins the Race

Directions: Calculate the cross-weight percentages in the following race simulations to obtain an optimal setup that will result in you being in 1st place.

1. The driver says that the car is too loose. During the pit stop you know the car needs more wedge so you increase the cross-weight. The cross-weight, the weight on the left rear and right front tire, should be set to 51% as shown in the diagram.



Total Weight of the Car is 3,400 lbs

- a. If the car weighs 3,400 lbs., how many pounds is the cross weight?

Hint 1: cross---weight is 51% of 3400 lbs

Hint 2: multiply total car weight with cross---weight percent

Hint 3: 3400×0.51

- b. If the cross---weight is 51% and the left rear tire has 900 lbs., how many pounds are over the right front tire?

Hint 1: Use the calculated cross---weight

Hint 2: cross---weight - left rear tire weight

Hint 3: $1734 \text{ lbs} - 900 \text{ lbs}$

- c. 50% of the car's total weight must be over the front tires. Now that you have the weight over the right front tire, how much weight is over the left front tire?

Hint 1: Solve 50% of car's total weight

Hint 2: left front tire = 50% of total car weight - left rear tire weight

- d. 50% of the car's total weight must be over the rear tires. You know that the left rear tire is 900 lbs., how much weight is over the right rear tire?

Hint 1: Half of car's total weight

Hint 2: Half of car's total weight - left rear tire weight

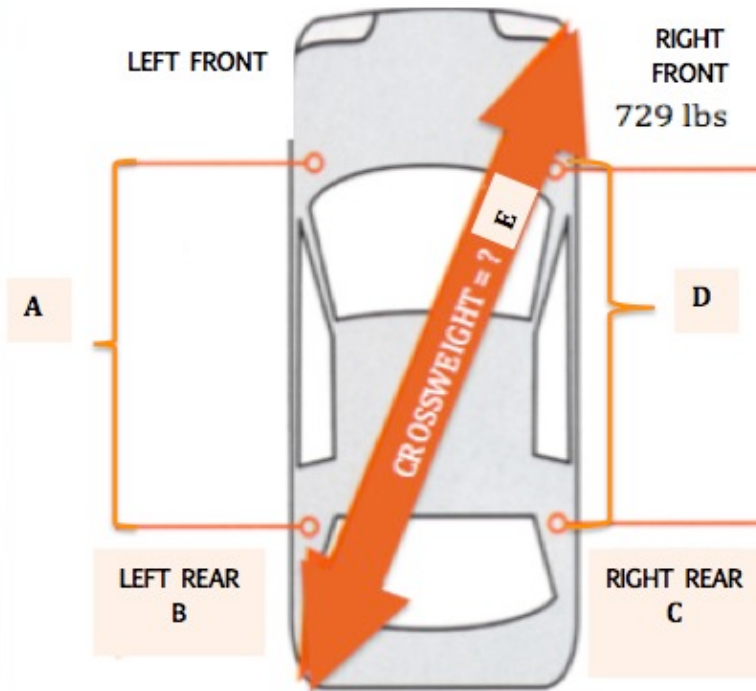
- e. What percent of the car's total weight is on the left side of the car over the left front and left rear tires?

Hint 1: Sum the weight of the left tires

Hint 2: Left tires weight divided by total car weight



2. The driver says that the car is too tight. During the pit stop you question whether the car needs wedge or reverse wedge. If the percentage of the cross weight is greater than 50 % the car has wedge. If the cross---weight is less than 50%, the car has reverse wedge.



Total Weight of the Car is 2722 lbs

a. Given the total weight, if the left side of the car is 48% of the total weight, what weight must be over the left tires?

b. How much weight is over the left rear tire if the left rear tire is 51.36% of the weight on the left side?

c. How much weight is over the right rear tire?

d. What percentage of weight is over the right side tires?

e. What is the percentage of cross---weight? Do you need wedge or reverse wedge?

