Name:_____   **Class:**_____

SPEED CALCULATIONS

The races we have just conducted were timed in **FEET PER SECOND**. Now we can take our times and convert them into **MILES PER HOUR**. This will allow us to see how fast our dragsters would be traveling in real life. Follow these simple steps, to convert feet per second into miles per hour.

1. Write down your race time in seconds.

    TIME IN SECONDS_____

2. Divide the length of the track (65 feet) by your race time. This will give you how many feet per second your car traveled.

    FEET PER SECOND_____

    $$\text{time}\overline{)65}$$

    $$\overline{)65}$$

3. Multiply that number (feet per second) times 60. This will give you feet per minute.

    FEET PER MINUTE_____

4. Multiply that number (feet per minute) times 60. This will give you feet per hour.

    FEET PER HOUR_____

5. Divide that number (feet per hour) by the number of feet in a mile (5,280). This will give you miles per hour (M.P.H.).

    MILES PER HOUR_____

6. Weigh your car on the scale and record the weight in GRAMS.

    WEIGHT IN GRAMS_____

7. Test your car for aerodynamics in the Wind Tunnel and record the resistance in GRAMS.

    AERODYNAMICS_____

AERODYNAMICS WORKSHEET

Name:_____   Class:_____

DIRECTIONS: Fill in the worksheet below. If you do not know the answers to the questions, use the Engineering Technology web site to research the answers. Use the **_TechnoTerms_** link. Or feel free to use any other resource.

1.   What is AERODYNAMICS?_____
_____
_____

2.   A wind tunnel measures _____ and _____

3.   Give three reasons why aerodynamics is an important technology.
     a. _____
     b. _____
     c. _____

4.   Explain how aerodynamics effects fuel economy for automobiles?
_____
_____

5.   _____ is the force applied up or down on an object.

6.   _____ is the air resistance force of a moving object.

7.   Explain how aerodynamics effects the speed of CO_2 racecars?
_____
_____

8.   Which of the following designs would be the least aerodynamic?

     (circle one)

     Design A   Design B

DESIGN A

WIND DIRECTION

DESIGN B

WIND DIRECTION
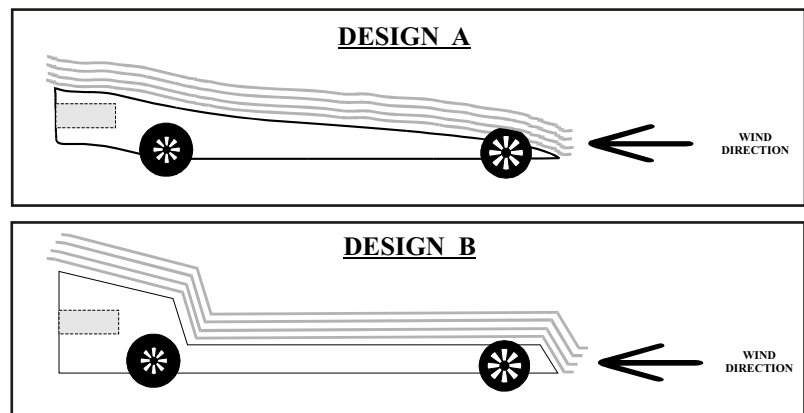
RACE EFFICIENCY

1.   What was the **DRAG** of your car?   Drag in grams [   ]

2.   What was the **WEIGHT** of your car?   X

     Weight in grams [   ]

3.   Multiply both numbers together.
     This will give you the EFFICIENCY
     of your dragster in grams.   Race Efficiency [   ]