

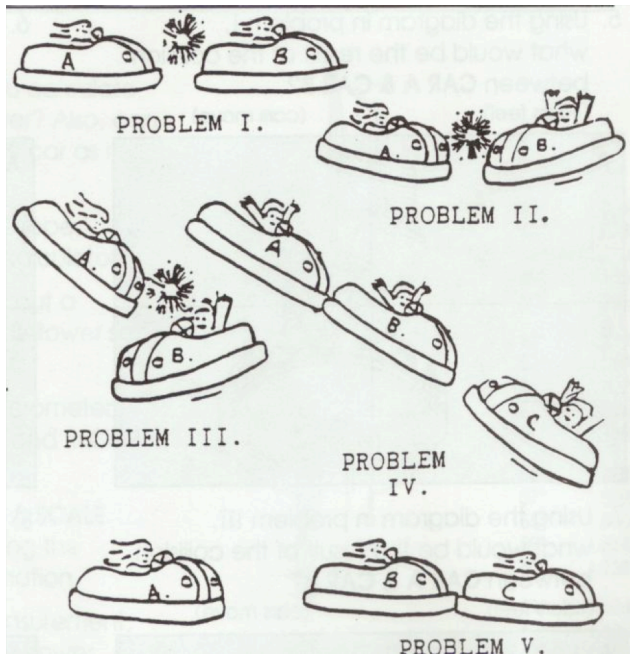
Name: _____ Period: _____ Date: _____

Amusement Park Physics- Momentum Bumper cars

The following exercise involves bumper cars at an amusement park. Use formulas for momentum to assist in answering the following questions.

INSTRUCTIONS: You will work with a lab partner on the Physics Day Pre Lab Bumper Cars. Each person in the group will keep individual records. All the information collected and calculated will be reviewed next class.

Bumper Cars: COYOTE CREEK CRAZY CARS



USE THE DIAGRAMS ON THIS PAGE TO ANSWER THE FOLLOWING QUESTIONS ON THE NEXT PAGE:

Mass of bumper car = 200 Kg Maximum Car Speed = 1.7 m/s Assume Rider Mass = 65 kg

PROCEDURE

1. Define momentum.
2. Define the Law of Conservation of Momentum.
3. Calculate the momentum of one car traveling at maximum speed (Remember to add the rider's mass to the mass of the car).

4. Using the diagram in problem I, what would be the result of the collision between car A and car B?

(riders feel)

(cars move)

A	
B	

5. Using the diagram in problem II, what would be the result of the collision between car A and B?

(riders feel)

(cars move)

A	
B	

6. Using the diagram in problem III, what would be the result of the collision between car A and B?

(riders feel)

(cars move)

A	
B	

7. Using the diagram in problem IV, what would be the result of the collision between cars A and B crashing into car C?

(riders feel)

(cars move)

A	
B	
C	

8. Why do automobiles have “airbags” and special headrests on the back of seats?