

Name \_\_\_\_\_  
Regents Physics  
Period \_\_\_\_\_

Date \_\_\_\_\_  
Measure & Math WS 5R  
Mr. Moy

## Relative Motion

1. You are standing at 7-11 and see a houseboat traveling at  $6.0 \text{ m/s}$  towards Jimmy who is in a roller coaster, which is moving at  $21.0 \text{ m/s}$  towards the houseboat. What is the speed and direction that the houseboat appears to be moving according to :
  - a. you?
  - b. Jimmy on the roller coaster?
  
2. A man driving a moped is traveling at  $47.0 \text{ m/s}$  while being chased by a clown on a unicycle. The unicycle is traveling towards the moped at  $82.0 \text{ m/s}$ . What is the speed and direction that the unicycle appears to be moving towards the moped according to:
  - a. the moped driver?
  - b. the bystander?
  
3. While Nicholas is traveling along an interstate highway, he notices a 170. mile marker as he passes through town. Later Nicholas stops near the 105 mile marker.
  - a. What is the distance between the town and Nicholas's current location?
  - b. What is Nicholas's current position?