ICP—RATE TEST Review Guide   Name_____ Per_____

<u>Directions</u>: You MUST complete ALL of this work by the start of Thursday, September 14 class. Please answer all questions completely. If you totally complete this review guide, you will be able to do the acceleration lab with me. If you choose NOT to complete this review guide, you will NOT do the acceleration lab with me.

► **Part A. Complete the Rose-Prism.org online review.**
- Log into Rose-prisem.org
- Your student ID is your firstname.lastname1 and   your password is your ID number that you use to log into your ThinkPad.
- Click on Reitz ICP on the left menu bar
- Take the CFA Rate/Acceleration practice quiz
- Take the Rate/Acceleration Review quiz

► **Part B. Reviewing Notes**
Chapter 11.1 Distance and Displacement (pages 328 – 331)

1. Imagine that you are a passenger in a car. Circle the letter of the best frame of reference you could use to determine how fast the car is moving relative to the ground?
   a. the people sitting next to you in the backseat.
   b. a van traveling in the lane next to your car.
   c. a signpost on the side of the road.

2. Circle the letter of the SI unit best suited for measuring the length of a room in your home.
   a. kilometers
   b. meters
   c. centimeters

3. What would your total displacement be if you walked from your front door, around the block, and then stopped when you reached your front door again? Circle the letter of the correct answer.
   a. one block
   b. zero
   c. the entire distance of your trip

4. A vector is a quantity that has both _____ and _____. Circle the best answer(s).
   a. direction   b. speed   c. magnitude

5. Circle the letter of each answer that could describe the magnitude of a vector.
   a. length   b. direction   c. amount

Chapter 11.2. Speed and Velocity (pages 332 – 337)

6. Circle the letter of each sentence that is true for either instantaneous speed or average speed, but NOT both.
   a. It is measure in meters per second.
   b. It is measure at a particular instance.
   c. It is computed for an entire trip.

7. Is the following sentence true or false? You can determine how fast you were going at the midpoint of a trip by calculating average speed for the entire trip. Circle the correct answer.
   a. True   b. False

8. A student walked 2 km in 0.5 hours. Circle the letter of his average speed on the way to school.
   a. 0.5 km/h
   b. 1.5 km/h
   c. 4.0 km/h

9. Circle the letter of each sentence that describes a change in velocity.
   a. A moving object gains speed.
   b. A moving object changes direction.
   c. A moving object moves in a straight line at a constant speed.

10. Is the following sentence true or false? If a car travels around a gentle curve on a highway at 60 km/h, the velocity does not change. Circle the correct answer.
   a. True   b. False

Chapter 11.3 Acceleration (pages 342 – 348)

11. Circle the letter for each way an object can accelerate.
   a. change in speed
   b. change in velocity
   c. change in direction

12. Circle the letter of the correct answer. A horse on a carousel that is moving at a constant speed is accelerating because _____.
   a. its direction constantly changes
   b. its speed constantly changes
   c. its height constantly changes

13. Circle the letter of the equation used to calculate the acceleration of an object.
   a. acceleration = change in velocity
   b. acceleration = change in velocity/total time
   c. acceleration = total time/change in velocity

► **Part C. Vocabulary Review.**
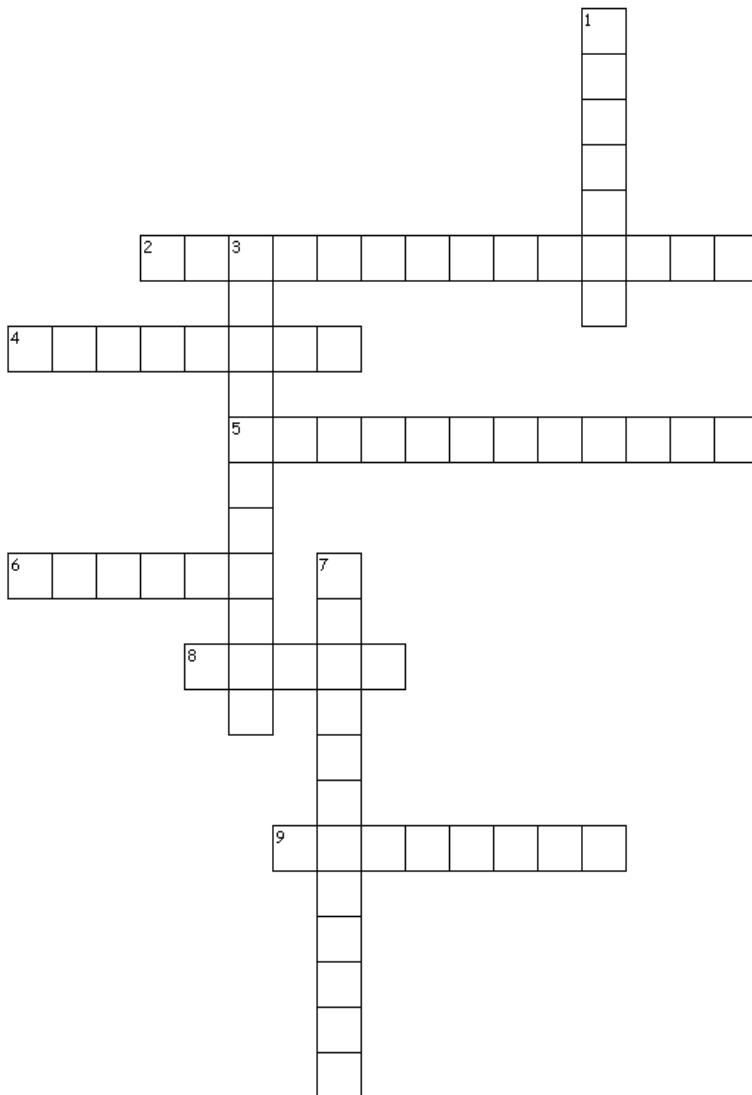
CLUES:
Across
2. movement in relation to a frame of reference
4. measuring the length of the actual path between two points in space
5. (final velocity - initial velocity) ÷ time
6. quantity that has both magnitude and direction
8. SI units are m/s
9. the speed and direction in which an object is moving

Down
1. natural phenomenon by which all things with mass are brought toward one another at 9.8 m/s/s
3. a speed-time graph in which data points form a straight line
7. the total distance traveled divided by the total time

Word Bank: NOT all word will be used!
acceleration, arithmetical, average speed, distance, linear graph, gadgety, gravity, relative motion, speed, varier, vector, velocity

► **Part D. Unit Review.** On the lines below, indicate what type of unit is being shown. Use a D for distance, A for acceleration, S for speed, and T for time.

cm = _____ m/s^2 = _____   m = _____   m/s/s = _____

min = _____   km/hr = _____   cm/s = _____   s = _____

m/s = _____   mph= _____   yards/second = _____   km/h/s = _____

► **Part E. Story Problem Review.**

35. Mr. Abdul Basit from Pakistan just set a new world record! He is the fastest texter using the Swype technology on a smartphone in the world. He managed to type 26 words in just 17.5 seconds which is now being recognized by Guinness World Records as the fastest attempted text on a mobile phone. Calculate Mr. Basit's texting speed. Don't forget your UNITS!

36. Every animal species has some kind of specialty that makes them unique. Some animals have power to run faster than super cars and some species are super slow in motion. Three toed sloths are the slowest animals in the world that are native to North America. Their maximum speed is 0.003 miles per hours. How far will a three-toed sloth move in five hours? Don't forget your UNITS!

37. A student is sprinting down the hallway because she is super late to class at a rate of 3.2 m/s.   She trips and skids for 6.4 meters. How long was she skidding on her face until she came to a screeching halt? DON'T forget your UNITS!

ALL of these problems MUST be completed for you to do lab with me on Thursday! I will be back on Thursday. You are having a TEST on Monday!