| Test 1 — Outline (Revised 1/20/20) | |
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| Course Information: Phys 2A | Instructor Name: John R. Walkup |

### Equations Provided

***d*** = ***v***o*t* + (1/2)***a****t*2 ***v*** = ***v***o + ***a****t* ***F***net = *m****a***

These are all the equations you will need other than simple trigonometric identities used for summing vectors. Use *g* = 10 m/s2. You may not use the equation beginning *v*2 = in any solution. I will also write out the values for the sine, cosine, and arctangent of any angles needed.

### Multiple-Choice Questions

1. This question will center on understanding the vector property of velocity or acceleration.
2. This question will center on the concept of projectile motion. I will throw an object and ask you a conceptual question about its motion.
3. Another conceptual question on projectile motion.
4. This question will center on understanding proper sign convention with respect to displacement, velocity, and acceleration.
5. Problem 3, 5, 7, or 10, 11, or 12 from Assignment “1-D Motion.”
6. Problem 1 – 5 from Assignment “Projectile Motion and Beginning Newton’s Second Law.”
7. Problem 9, 10, or 12 from Assignment “Projectile Motion and Beginning Newton’s 2nd Law.”
8. Problem 5 “Forces and Basic Newton’s Second Law.”
9. Problem 9 “Forces and Basic Newton’s Second Law.”
10. Read the lecture notes on Determinism. If you read them and understand them, you should be able to answer this question.
11. I will give you three vectors and ask you to sum them head-to-tail. You will then choose the resultant vector that matches the correct result.
12. Wild card
13. Wild card

### Free Response Problems

1. I will provide you with two vectors, including their lengths and directions. You will sum the vectors using the component method and choose the correct resultant vector. (Note: Using the head-to-tail or parallelogram methods will not be sufficient to answer the question.)
2. Fundamental projectile motion problem. I will shoot an object at some initial speed and angle. At some specified time later, you will tell me where the object is located, how fast it is traveling, and in which direction it is traveling.
3. Wild card