Name: Date: Period:

Chapter 3 (Two-Dimensional Kinematics)

Homework Check A (collected XXXXX)

Reading

Please read the following on your own in the OpenStax textbook by the dates given. It will give good context for class discussion. Check off when you have completed them.

- ◯ 3.1 Kinematics in 2D: An Intro XXXXX
- ◯ 3.2 Vector Addition & Subtraction: Graphical Methods XXXXX
- ◯ 3.3 Vector Addition & Subtraction: Analytical Methods XXXXX
- ◯ 3.4 Projectile Motion XXXXX

Problems and Conceptual Question

Get stamps from your instructor as you complete each of the following problems. The conceptual questions (CQ) require at least one sentence of explanation.

Stamps will not be given if work is not shown on a separate sheet of paper

3.2 Graphical Methods (3 Points) P #1,2,4 CQ #1,3,4,5,7	**3.3 Analytical Methods** (8 Points) P #13,15,16,18,20-23 CQ #9-11 **HW Quiz on XXXXX**
3.4 Projectiles (Part I) (4 Points) P #25,27,40	

Problem Answers

1. (a) 480 m
   (b) $\approx$ 380 m @ 20° E of N
2. (a) 1.20 km
   (b) $\approx$ 380 m @ 70° N of E
4. $\approx$ 31 m @ 35° W of N
13. (a) 1.56 km; (b) 120 m east
15. $S_x = S_y = 87.0\,\text{km}$
16. 30.8 m @ 35.8° W of N
18. $R_x = 1.94\,\text{km}$; $R_y = 7.24\,\text{km}$
20. 92.3 m @ 53.7° S of W
21. 18.4 km south, then 26.2 km west
22. 2.97 km @ 22.2° W of S
23. 7.34 km @ 63.5° S of E
25. $x = 1.30 \times 10^2\,\text{m}$; $y = 30.9\,\text{m}$
27. (a) 3.50 s
    (b) 28.6 m/s
    (c) 34.3 m/s
    (d) 44.7 m/s @ 50.2° below horiz
40. 10.3 m/s @ 73.1° below horiz

Name: Date: Period:

Chapter 3 (Two-Dimensional Kinematics)

Homework Check B (collected on Test Day - XXXXX)

Reading

Please read the following on your own in the OpenStax textbook by the dates given. It will give good context for class discussion. Check off when you have completed them.

◯ 3.5 Addition of Velocities XXXXX

Problems and Conceptual Question

Get stamps from your instructor as you complete each of the following problems. The conceptual questions (CQ) require at least one sentence of explanation.

3.4 Projectiles (Part II) (10 Points) P #29,35,41,43,45 CQ #13-15	**3.5 Addition of Velocities** (5 Points) P #53,54,57 CQ #17-20

Problem Answers

29. (a) 18.4°
    (b) over the branch
35. 1.50 m (launch angle of 45°)
41. 4.23 m; misses the nest
43. No. Max range ≈ 92 m
45. 15.0 m/s
53. (a) 5.00 m/s; -4.00 m/s
    (b) 13.00 m/s; 7 min 42 sec
54. (a) 0.70 m/s faster
    (b) second runner wins
    (c) 4.17 m
57. 8.05 m/s @ 81.8° N of E

Bonus Problems

P #37	P #47	P #61	P #67

Homework will be accepted for full credit until the test. Homework turned in after the test will be accepted for half credit until the Unit 4 Test. *Please remember that you will not be eligible to complete test corrections if you do not turn in your homework.*