**AP Physics C UNIT 1**: Graphing & 1D Motion

**Thurs 8/22**: Due: ---; Syllabus; Math Review **HW: Sign Contract**

**Fri 8/23:** Due: Sign Contract; Lab: Samo 500 I; Conversions **HW: Conversions**

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| --- | --- | --- | --- | --- |
| Monday | Tuesday | Wednesday | Thursday | Friday |
| *26-Aug* | *27-Aug* | *28-Aug* | *29-Aug* | *30-Aug* |
| Due: Conversions | Due: Lab Qs | | Due: PS1 | Due: Lab & Graphing WS |
| WU: Conversions | WU: Bee Problem | | WU: Reading Graphs | WU: Romeo Problem |
| Lab: Samo 500 II | Lect #1: Velocity  Start Lab: Where? What? | | Lab: Where? What?  Graph Recap /EQN Sheet | Review HW  **10 pt Quiz** |
| HW: Lab Qs | HW: PS1 | | HW: Lab & Graphing WS | HW: Rocket WS |
| *2-Sep* | *3-Sep* | *4-Sep* | *5-Sep* | *6-Sep* |
|  | Due: Rocket WS | |  | Due: PS2, Lab Qs |
| NO SCHOOL | Lect #2: Acceleration | | WU: Accel. Graph | WU: Falling How Far? |
| Labor Day | Return Quiz | | Lab: Ramp | Lect #3: Kinematics |
|  | HW: PS2 | | HW: Lab Qs | HW: PS3 |
| *9-Sep* | *(Back 2 School) 10-Sep* | *11-Sep* | *12-Sep* | *13-Sep* |
| Due: PS3 | Due: PS4 | Due: Interp Motion WS | Due: --- | Due: More Calc Probs |
| (Optional PS 3.5) | WU: Catch Up Probs | **15 pt Quiz** | Lect #4: Motion w/ Calc. | PS5 |
| PS4 | Interp Motion WS | Start Lect#4 |  | Return 15 pt Quiz |
| HW: Finish PS4 | HW: Interp Motion WS | HW: --- | HW: More Calc Probs | HW: Finish PS5 |
| *16-Sep* | *17-Sep* | *18-Sep* | *19-Sep* | *20-Sep* |
| Due: PS5 | Due: --- | |  |  |
| Discuss PS5 | **EXAM: Graphing & 1D Motion** | |  |  |
| Unit 1 Review | **Challenge Problem** | |  |  |
| HW: Unit Review |  | |  |  |

###### ***\*HW SOLUTIONS USE g = 9.8 m/s2***

###### **PS 1: Chap 2, pg. 50 (2 – 5, 11)**

**2.** 180 km, 63.4 km/h **3.** 5 m/s, 1.25 m/s, -2.5 m/s, -3.3 m/s, 0 m/s **4.** 50 m/s, 41 m/s **5.** 3.75 m/s, 0 m/s  **11.** 5 m/s, -2.5 m/s, 0 m/s, 5 m/s

Graphing WS

1. 6 m, 18 m, 0 m/s, 2 m/s, acc, 2 m/s, C, 0.6 m/s, 1.4 m/s
2. 4 m/s, 13 s, A, 16 m, slowing down in (+) dir., 10.5 m, constant v of 1 m/s in (+) dir., all segments, D
3. 4 m/s, -4 m/s, 0-1 s & 3-5 s & 6-7 s, 8 m, 3 m, 0 m, -3 m, 2 m, 24 m
4. 10 m, 20 m, 5 m/s, 5 m/s, 3-4 s & 5-6 s, 6-8 s, -10 m/s, +10 m/s, +10 m, 6.25 m/s

**Rocket WS**

**1.** 160 m/s **2.** 0-2 s **3**. D **4.** -100 m/s **5.** 20 m/s2 **6.** A **7.** 22 s **8.** 80 m **9.** B **10.** 480 m **11.** 1840 m

**12.** -10 m/s2 **13.** -500 m **14.** 1340 m **15.** 16 s **16.** 22 s **17.** 6 s

**PS 2: Chap 2, pg. 51 (12 – 16)**

**12.** –4 m/s2 **13.** 1.34 x 104 m/s2 **14.** 20.0 m/s, 5.00 m/s, 262 m **15.** graph, 1.60 m/s2, 0.800 m/s2 **16.** graph, graph, -4 m/s2, 34 m, 28 m

**PS 3: Chap 2, pg. 52 (22, 24, 25, 28, 32)**

**22.** 5.25 m/s2, 168 m, 52.5 m/s **24.** 160 ft **25.** –16 cm/s2 **28.** 12.7 m/s, -2.30 m/s **32.** 3.10 m/s

**PS 4: Chap 2, pg. 52 (29, 30, 31, 35, 39)**

**29.** 8.94 s, 89.4 m/s **30.** eqns, 225 m, **31.** 20.0 s, nope needs 1 km **35.** 35.0 s, 15.7 m/s

**39.** 3.00 m/s, 6.00 s, -0.300 m/s2, 2.05 m/s

**PS 5: Chap 2, pg. 51 (17, 18, 27, 54, 60)**

**17.** 2.00 m, -3.00 m/s, -2.00 m/s2 **18.** 13.0 m/s, 10.0 m/s, 16.0 m/s, 6.00 m/s2, 6.00 m/s2 **27.** 2.56 m, -3.00 m/s **54.** a = -(10.0 x 107 m/s3)t + 3.00 x 105 m/s2, x = -(1.67 x 107 m/s3)t3 +(1.50 x 105 m/s2)t2, 3.00 x 10-3 s, 450 m/s, 0.900 m **60.** 15.0 s, 30.0 m/s, 225 m

**More Calculus Motion Problems**

**1.** 40.5 m/s, 71.5 m **2.** 82 cm behind origin, 24 cm/s2**3.** a) -32t + 256 b) -16t2 + 256t + 4 c) 192 ft/s, 452 ft

d) 8 s e) 1028 ft f) 16 s g) +/- 96 m/s