IB Physics

Forces

Chapter 4 Syllabus

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Block | Class | Due on this class | | |
| 1  Nov 4/7 | -Welcome to Physics! – Aristotle and Galileo  -Newton's laws  -Net Force Part 1 - Horizontal  -The difference between mass and weight | **Read:** 4.1-6 | | |
| 2  Nov 8/9 | -Net Force Part 2 - weight  -Solving Net Force Problems with weight  -Calculating Force of friction | **Read:** 4.7  **Practice:** Vertical Acceleration Questions from A4.2  **Ch. 4 Problems:** 7, 9[[1]](#footnote-1) | | |
| 3  Nov 14/15 | -Solving problems with Friction  -Work on some friction problems in class  -Inclined Planes Demo  -Forces on inclined planes - Note guide/Video Flip | **Practice:** Friction questions from A4.3  **Ch. 4 Problems:** 10(1.3E4 N), 12(+3.8 m/s/s) | | |
| 4  Nov 16/17 | -Calculating the four forces on inclined planes  -Work on Inclined Planes Problems | **Video Flip: Inclined Planes (I)**  **Read:** p. 94  **Practice:** Inclined Planes Questions from A4.4  **Ch. 4 Problems:** 36(103 N, 0 N), 37 | | |
| 5  Nov 18/21 | -Solving Pulley problems  -Intro of *Force Lab (no handout)*  -How to deal with no mass on Inclined Planes  -Hand out FA 4.2, 4.3, 4.4, 4.5, Force Lab - Design | **Read:** 9.1-2 (pp. 226-229, only not torque)  **Practice:** Pulleys  **Ch. 4 Problems:** 41, 47 | | |
| 6  Nov 22/23 | -Variables for *Force Lab*  -Work on *Force Lab* | **Video Flip: Force Lab Variables**  **Ch. 4 Problems:** 76(11.3, 0.88 m/s/s), 87 | | |
| 7  Nov 29/30 | -Work on *Force Lab* | **Ch. 4 Problems:** 24b(0.520 m/s/s @51.0o), 55 | | |
| 8  Dec 1/2 | **-Summative Assessments:**  **-SA 4.2 - Vertical Dynamics**  **-SA 4.3 - Friction**  **-SA 4.4 - Inclined Planes** | **Turn in:** FA 4.2, 4.3, 4.4, 4.5  **Turn in:** Problem Set:  {Chapter 4: 7,9,10,12,36,37,41,47,76,87,24b,55} | | |
| Dec 5/6 | -Why it is important to consider the weight of a barrel of bricks.  **Gravity and circular motion!!!!!** | **Turn in: Force Lab (Design)** | | |
| Assignments   * 1 Lab:   + Student designed lab on force * 4 Formative/ 3 Summative Assessments:   + 4.2 – Vertical Dynamics   + 4.3 – Friction   + 4.4 – Inclined Planes   + 4.5 – Pulleys (no summative) | | | | \*Handouts:  Syllabus-Forces  FA 4.2/FA 4.3/FA 4.4/FA 4.5  Worksheet-NetForceAndFriction  NoteGuide-InclinedPlanesExample  Worksheet-PlanesAndEquil |

1. These are problems from chapter 4. They are on page 98 of your text. Be sure to do the Problems, and not the Questions that appear before them. Answers to odd questions are in the back of the book in appendix A, pages 28 and 29. I give you the even answers in the parenthesis. There are help videos for these problems. (Or at least as I type this, I hope to post some...) I will check these off as we go, but you will turn these in together as a problem set at the end. Do careful neat work and start each day’s problems on a new sheet of paper. [↑](#footnote-ref-1)