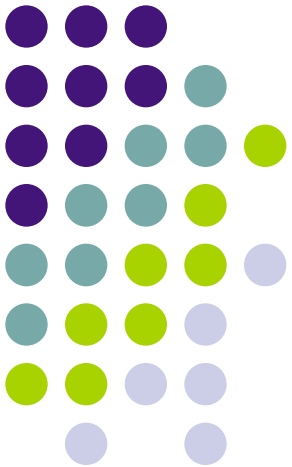
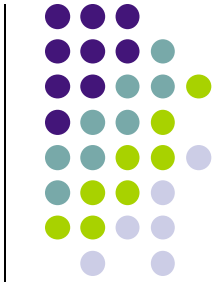
Providing Effective Feedback & Accurate Grades

Teaching Matters Series

Lauren Schiebelhut & Holly Swift

11 October 2012





- Holly Swift, Teaching Fellow
  - With 9 semesters experience:
    - Evolution, Ecology, Ecosystems of California, Mathematical Modeling for Biology, Introduction to Data Analysis, Introduction to Biology.
- Lauren Schiebelhut, Teaching Assistant
  - With 5 semesters experience:
    - Introduction to Marine Science, Introduction to Biology Lab.

Outline

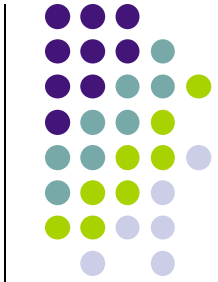
- The Purpose of Grading
- Effective Grading
- Rubrics
- Efficient Grading

Goals & Learning Outcomes

- Recognize the utility of employing rubrics.
- Be able to list a couple strategies that can be used to increase grading efficiency and effectiveness.
- Apply methods to own grading issues

The Purpose of Grading

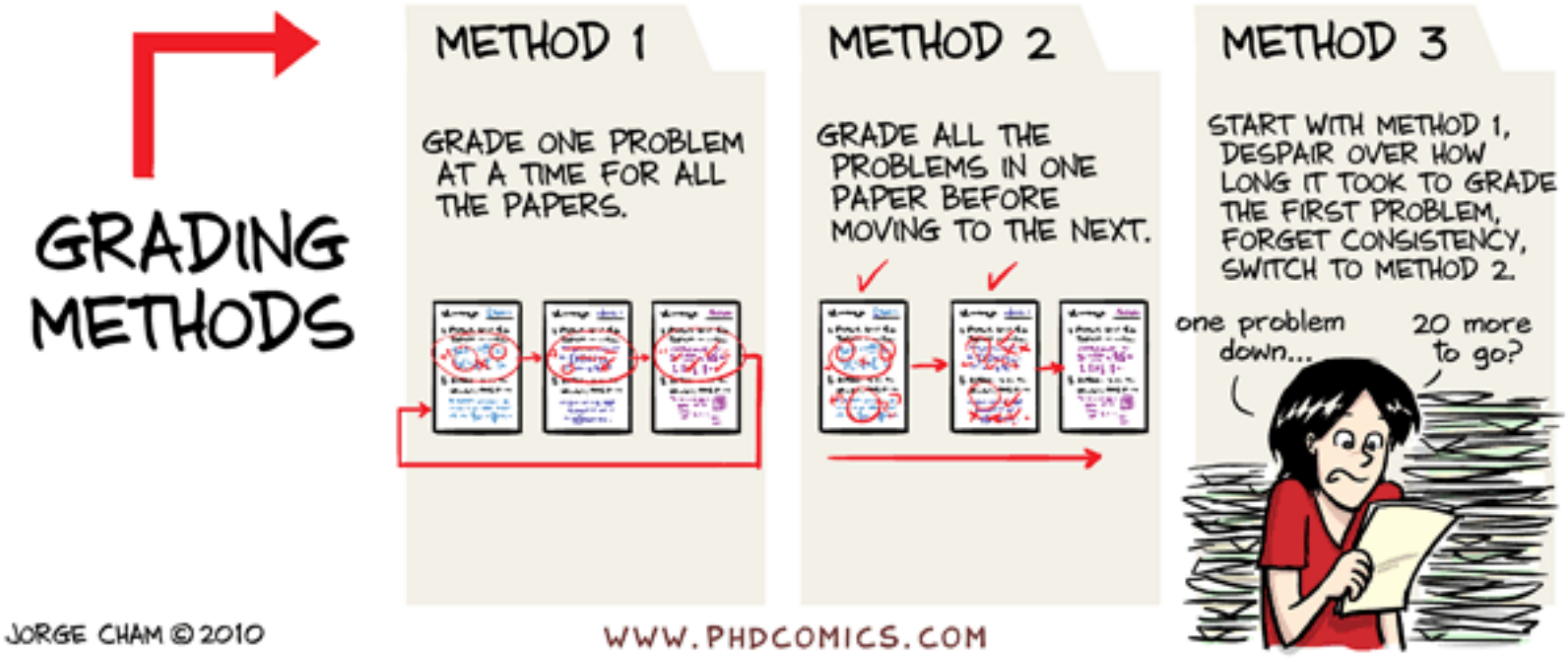
Reviewing the Reasons:



- Assign value to work.
- Provide feedback to improve work.
- Motivate good work.
- Learn what students know.
- Select students for future study/rewards.

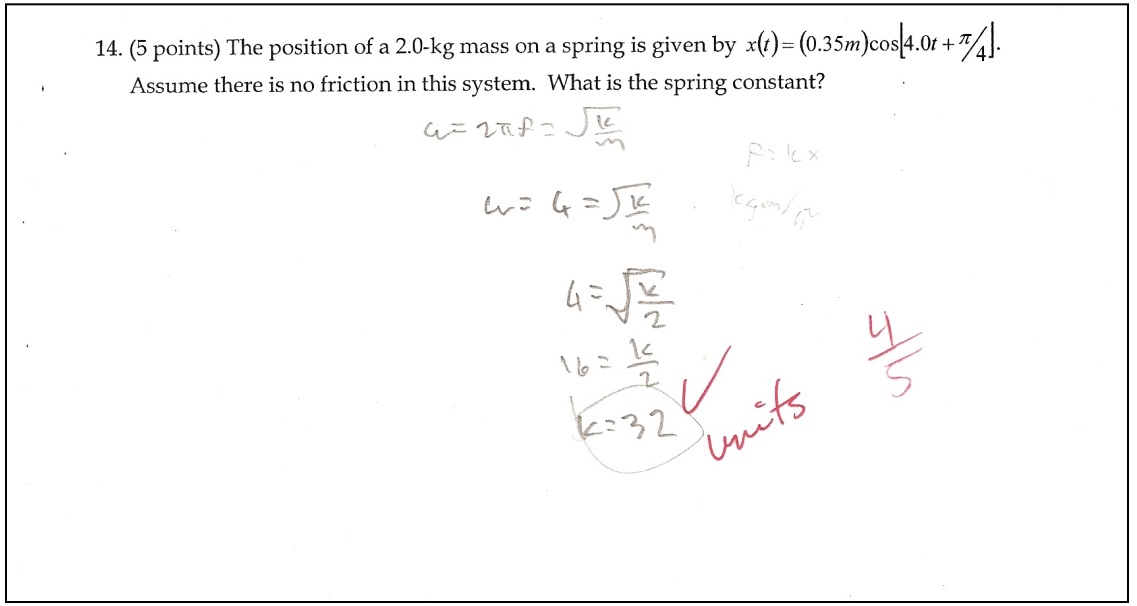
(paraphrased B. Gross Davis, Tools for Teaching, 2nd ed.)

Effective Grading



Effective Grading

- What are the components needed for effective grading?



14. (5 points) The position of a 2.0-kg mass on a spring is given by $x(t) = (0.35m)\cos\left[4.0t + \pi/4\right]$. Assume there is no friction in this system. What is the spring constant?

$\omega = 2\pi f = \sqrt{\frac{k}{m}}$

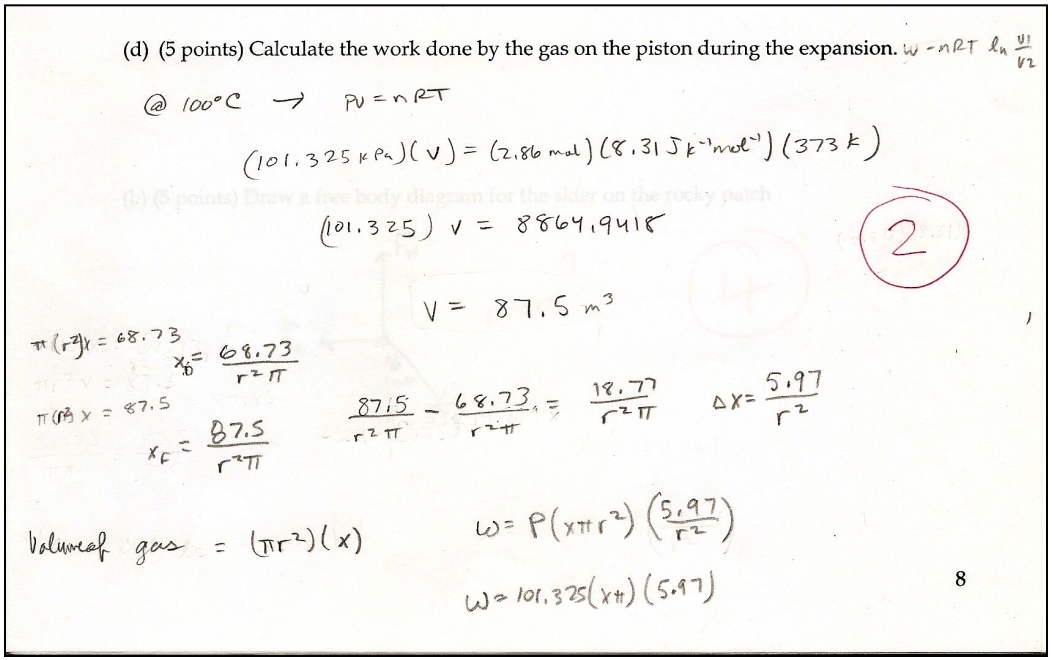
$\omega = 4 = \sqrt{\frac{k}{m}}$

$4 = \sqrt{\frac{k}{2}}$

$16 = \frac{k}{2}$

$k = 32$ ✓ units

4/5



(d) (5 points) Calculate the work done by the gas on the piston during the expansion. $W = nRT \ln \frac{V_1}{V_2}$

@ 100°C → $PV = nRT$

$(101.325\ kPa)(V) = (2.86\ mol)(8.31\ J\,K^{-1}mol^{-1})(373\ K)$

$(101.325)\ V = 8864.9418$

$V = 87.5\ m^3$

2

$\pi(r^2)x = 68.73$ $\quad x_0 = \frac{68.73}{r^2\pi}$

$\pi(r^2)x = 87.5$ $\quad x_f = \frac{87.5}{r^2\pi}$

$\frac{87.5}{r^2\pi} - \frac{68.73}{r^2\pi} = \frac{18.77}{r^2\pi}$ $\quad \Delta x = \frac{5.97}{r^2}$

Volume of gas $= (\pi r^2)(x)$

$W = P(x\pi r^2)\left(\frac{5.97}{r^2}\right)$

$W = 101.325(x\pi)(5.97)$

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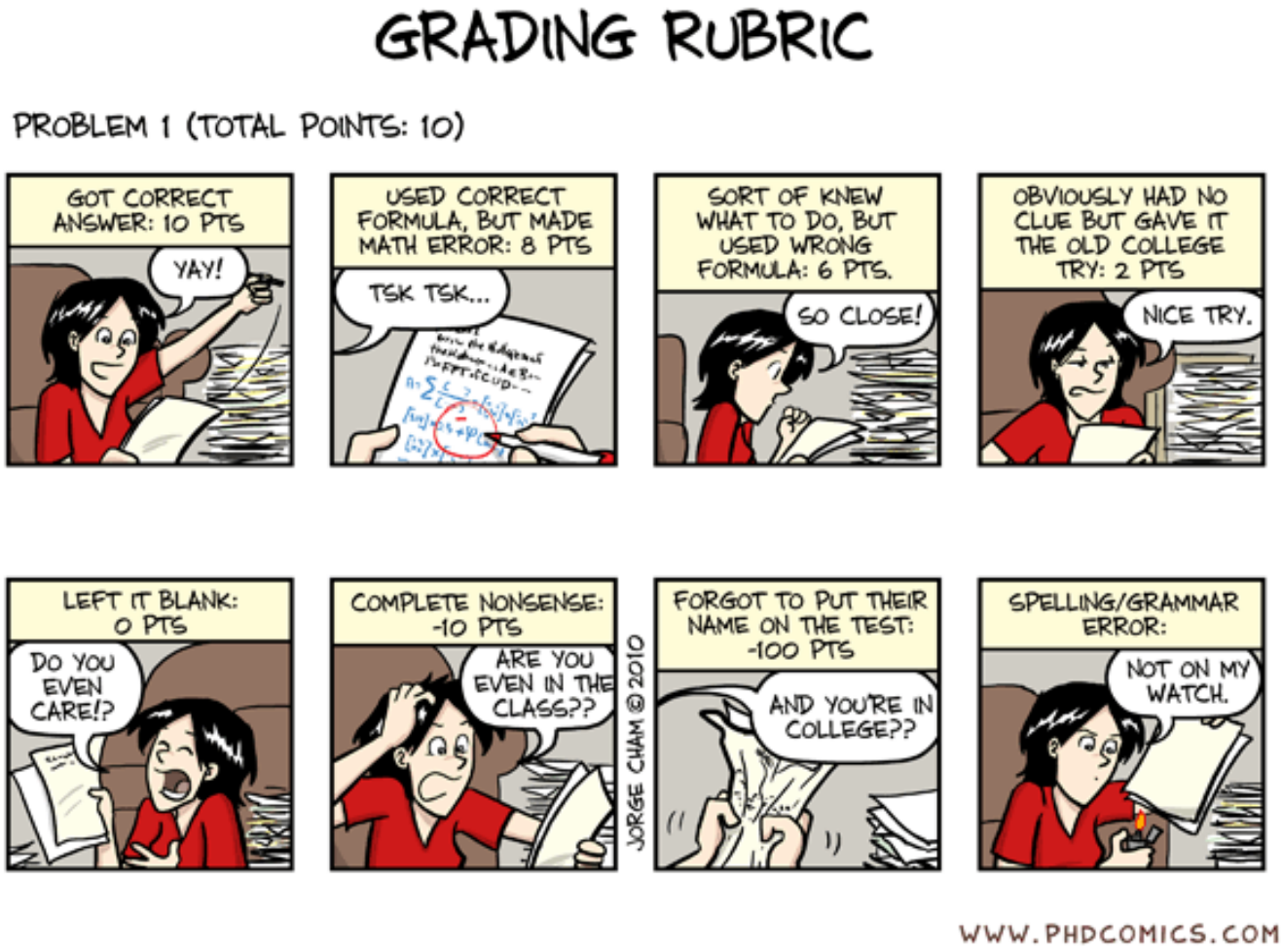
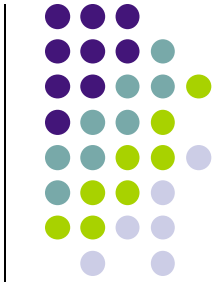
- Why 2 points?

Rubric: An Invaluable Tool for Grading



Rubric: An Invaluable Tool for Grading

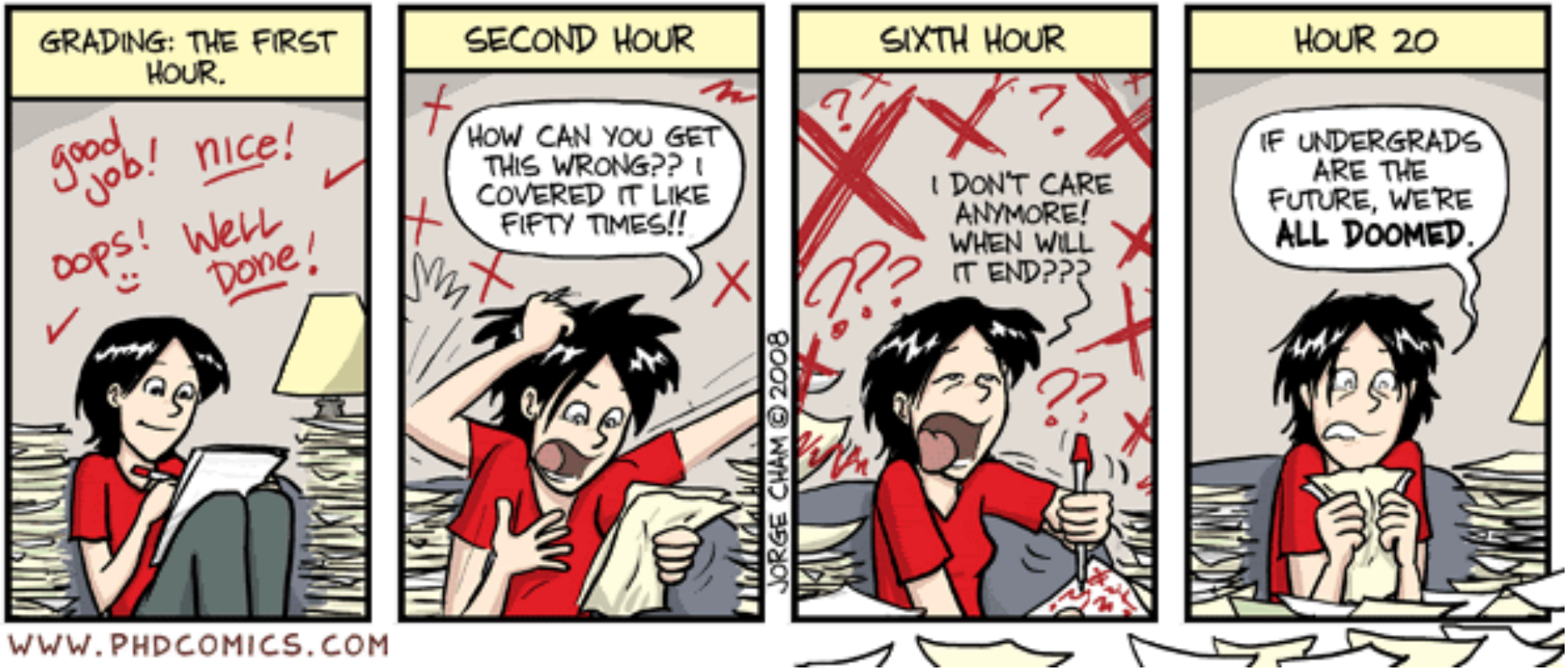


Holistic Scales

- **A** (Exemplary Response)
- **B** (Competent Response)
- **C** (Minor Flaws but Satisfactory)
- **D** (Serious Flaws but Nearly Satisfactory)
- **F** (Begins, but Fails to Complete Problem)

- **2** (Correct Solution)
- **1** (Computational error or partial answer)
- **0** (No answer or wrong answer based on an inappropriate plan)

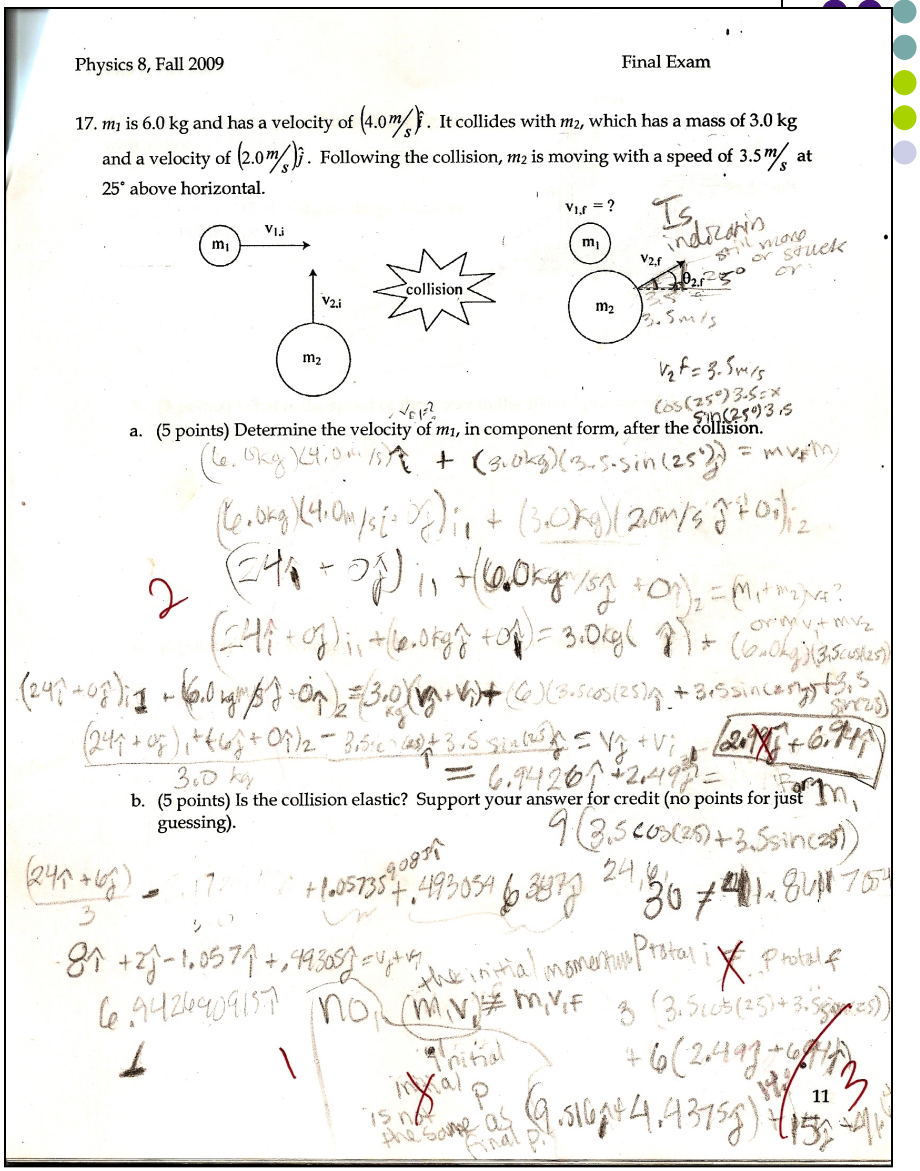
Grading Efficiently, Fairly, and Accurately



Grading Efficiently, Fairly, and Accurately

- Rubric
  - Instructor & TAs agree on it
  - Compare it to student work
- Grading
  - Keep students' identities hidden
  - Grade one problem for all students before moving to next
  - Same person grades same question for all exams.
- Marking & Commenting
  - Balance between information given & time
- Make assignments with grading in mind

Remember, it is the students' responsibility to ***clearly*** communicate!



Physics 8, Fall 2009 Final Exam

17. m_1 is 6.0 kg and has a velocity of $\left(4.0\,m/s\right)\hat{i}$. It collides with m_2, which has a mass of 3.0 kg and a velocity of $\left(2.0\,m/s\right)\hat{j}$. Following the collision, m_2 is moving with a speed of 3.5 m/s at 25° above horizontal.

a. (5 points) Determine the velocity of m_1, in component form, after the collision.

b. (5 points) Is the collision elastic? Support your answer for credit (no points for just guessing).

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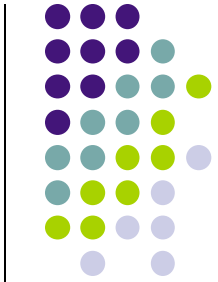
Select a Grading System Appropriate to the Assignment or Test Content:

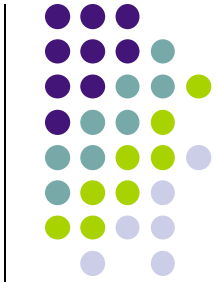
- Use the fewest grading levels need to suit the task without sacrificing effective student learning
  - Five levels: A, B, C, D, F
  - Four levels: Check plus, Check, Check Minus, No Check
  - Three levels: 2, 1, 0 / 5, 3, 0 : translating into Outstanding, competent, unacceptable
  - Two level: Pass, not pass; Credit, no credit; Satisfactory, unsatisfactory

Communicating Grades



- Use understood abbreviations.
- Positive comments, followed by critique, followed by positive comments.
- Provide context.
- Explain rules for appealing or getting further explanation.

Discussion



- What are some issues you have been having with grading?
- What methods can help alleviate this problem?

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