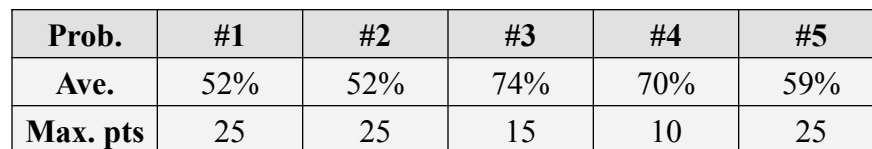


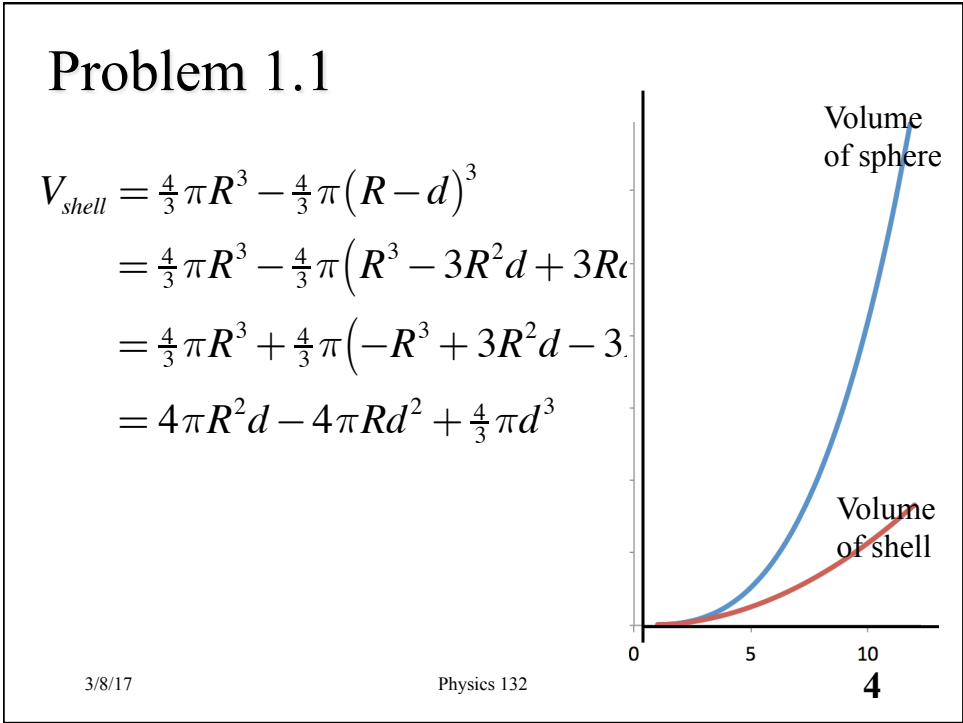
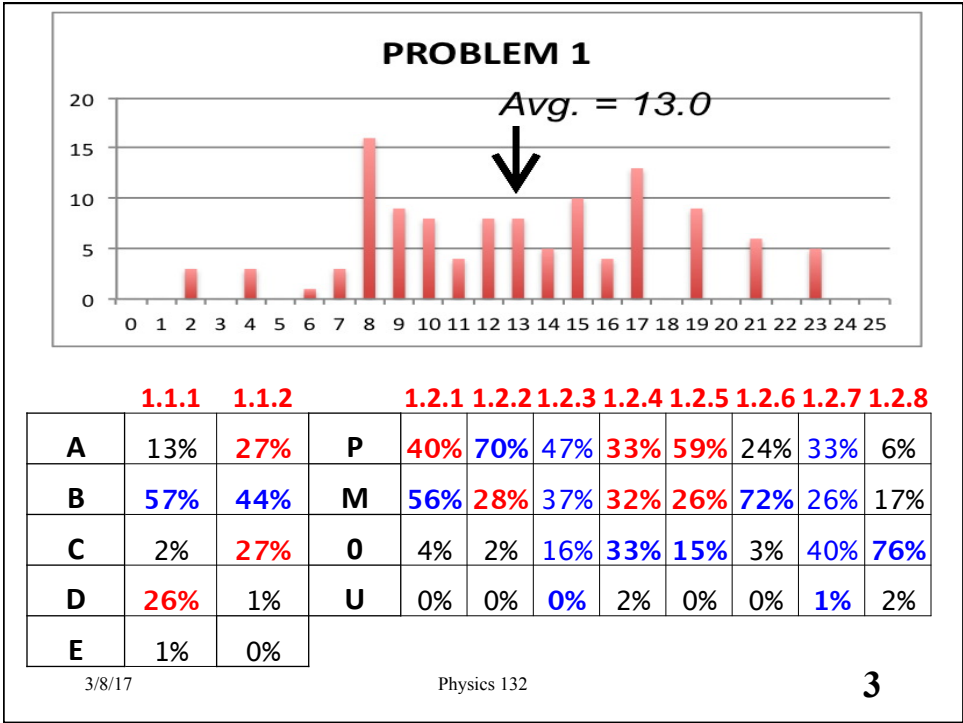
Prof. E. F. Redish

# *FoxTrot*



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## Problem 1.2

- [https://www.youtube.com/watch?v=2ui\\_Robh7rs](https://www.youtube.com/watch?v=2ui_Robh7rs)
- $t = 7:22$



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## Telling the story tool



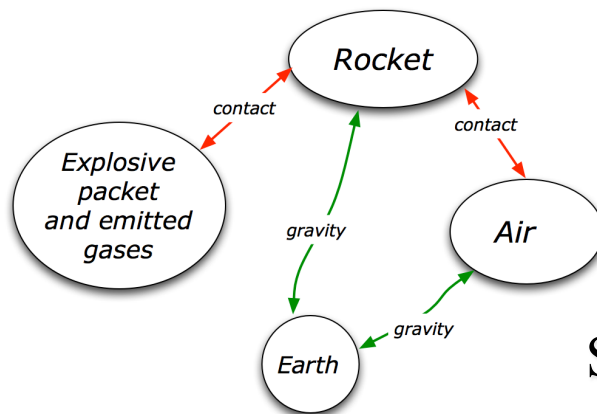
- A critical element in understanding how equations (and the physics) works is understanding *mechanism* – How things happen.
  - Components (characters)
  - Interactions (relationships)
  - Time sequence (plot)
  - Causes and principles (message / moral)
- Learning to tell the story is a critical piece of learning to do any science.

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## System schema



Story?

- What?
- Where?
- When? 7

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## Problem 3



■ <https://www.youtube.com/watch?v=7Rb5SZYRRqo>

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## Problem 4

### ■ “Story”

### ■ Elements (6)

- Context
- Characters and their interactions
- What’s happening (process)
- What makes it happen (causes / mechanism)

### ■ Example (4)

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Telling the story of a physics problem means looking at what is actually happening physically in the situation at every point in time. [It] helps us to better understand how something went from initial to final state [and to]... see forces or interactions that we might have otherwise missed. For example, when we throw a ball up into the air and catch it again, we can’t just look and see that it was moving up and then down and then stopped. We have to see that at first the hand was exerting an upward force, but when it was released only gravity acted on the ball, causing a constant deceleration until it changed direction. And even when its velocity changes at the top, the acceleration stays the same because it is only due to gravity. Without this story we probably could not identify the  $v$  and  $a$  graphs of this situation.

Telling a story of a physics problem is useful in order to break down a scenario into separate individual moments and then to understand what is happening in terms of physical concepts at each point in the story. An example could be a girl at a skate ramp going down the ramp from one side and back up the other, going back and forth, in order to understand how energy is changing. [Continues the example to correctly describe the changes in the skater's energy.]

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