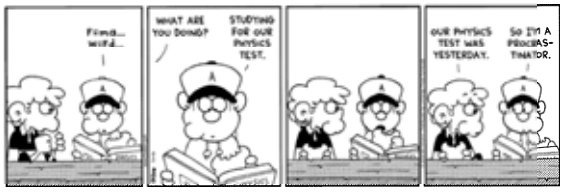
October 11, 2010 Physics 121 Prof. E. F. Redish

■ **Theme Music:** Van Morisson

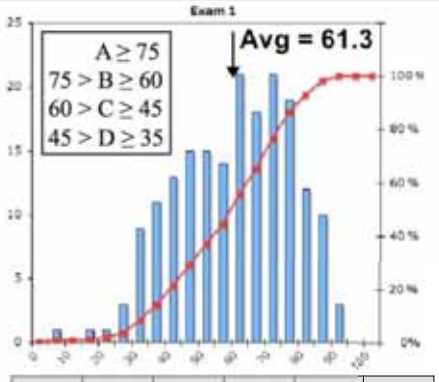
*Checkin'It Out*

■ **Cartoon:** Bill Amend

*FoxTrot*






| Prob. | #1 | #2 | #3 | #4 | #5 |
|---|---|---|---|---|---|
| Max pts | 25 | 25 | 15 | 10 | 25 |



## Results on individual problems

| | |
|---|---|
| Problem 1 | 55% |
| Problem 2 | 58% |
| Problem 3 | 38% |
| Problem 4 | 75% |
| Problem 5 | 79% |



■ 1. A toy car can move to the right or left along a horizontal line (the positive part of the distance axis) and is being pulled or pushed by a small child. Assume that friction is so small that it can be ignored. Choose the force graph (or graphs) for each statement below that the child could exert to allow the described motion of the car to take place. You may use a choice more than once or not at all. If you think that none is correct, answer choice **N.** Put your answers in the boxes at the right. (5 pts each)

a) The car moves toward the right and is slowing down at a steady rate (constant acceleration).
b) The car moves toward the right and is speeding up at a steady rate (constant acceleration).
c) The car moves to the right first speeding up and then slowing down.
d) The car moves toward the right with a steady (constant) velocity.
e) The car moves toward the left (toward the origin) with a steady (constant) velocity.



| | 1.a | 1.b | 1.c | 1.d | 1.e |
|---|---|---|---|---|---|
| a | 8% | 65% | 0% | 25% | 0% |
| b | 55% | 2% | 2% | 0% | 25% |
| c | 1% | 31% | 1% | 8% | 0% |
| d | 5% | 1% | 0% | 2% | 5% |
| e | 1% | 1% | 1% | 64% | 62% |
| f | 2% | 0% | 43% | 1% | 1% |
| g | 0% | 0% | 33% | 0% | 1% |
| h | 27% | 0% | 2% | 1% | 5% |