This portion of the exam is worth 85 points. The take-home portion will be worth the remaining 15 points.

1. [12 pts - 3 each] Name a different strategy that could be used to solve each problem below, then justify your choice by telling what qualities of the problem merit that choice. DO NOT SOLVE.

(a) I bought fifteen jawbreakers and 4 tootsie-pops for $2.30. My sister bought 9 jawbreakers and 8 tootsie-pops for $3.00. How much does a tootsie-pop cost?

- Guess & check - There are few possibilities + 3 tootsie to check against.
- Use an equation - We have enough info to make a relationship.
- Or make a table/chart - We need to keep prices (+ guesses) organized.

(b) You want to get new carpeting for your 9- by 12-foot living room. If the carpet you want is priced at $5.99 per square yard, how much will it cost you to carpet the room?

- Draw a picture - We want to visualize the room.
- Or set a subgoal - We need the area before we can find the price.

(c) Your calculator can't compute $15^{137}$. Find the tens digit of this number anyway.

- Look for a pattern - There may be repetition among the digits.
- Or solve a simpler problem - The number is too big!

(d) Find three whole numbers whose product is 1200 and whose sum is 85.

Same options as part (a).

2. [8 pts] Solve the problem below, showing clear work and explaining your computations in 3-4 sentences:

Miranda spent a fifth of her money at Border's, $40 at Barnes and Noble, and got an $18 refund at Waldenbooks. Afterwards, she had a total of $30. How much did she start with?

Work backwards:
- Deduct the $18 she got at Waldenbooks; she had $12 then.
- Restore the $40 she spent at B+N; puts her at $52.
- That $52 is 4/5 of her original amount, so 1/5 is $13.
- Restore that for a final amount of $65.