

Special Problem Solutions and Notes

1. Checkerboard Squares: ans 204 total squares
strategy: lead students to be systematic, to consider the different sizes of squares on the board, and address them separately. For example the smallest square is a 1 by 1 square. How many of those? Then to to the next largest square, a 2 by 2, how many of those? In short order a pattern can be detected, and one finds the answer is the sum of perfect square numbers from 1-8.
2. Commuter train: ans--55 minutes of walking (see commuter train "help" doc)
3. Corey the Camel: ans--533 maximum bananas
Strategy: consider that each drop off spot must be chosen so as to have perfect multiples of 1000 bananas. This is to maximize efficiency, so one never goes back for less than a full load.
4. Its All Gone: ans--\$8.75
Strategy: lead students to visualize, enact, in any way they can the entire process in reverse. From this they become involved in the inverse relationships. It can of course be done constructing an equation, but that is, well, less "elegant?"
5. Bobo and the Train: ans--15 mph
Strategy: compare the relative distances (which will be proportional to rates) between the two scenarios, A, running toward the train vs. B running away from train. From this you can know how far the train is from the bridge in terms of bridge lengths, and compare what the runner covers vs train, hence their relative speeds.