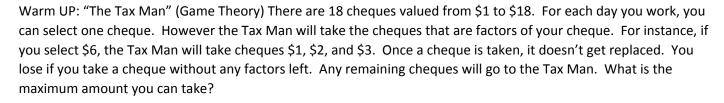
Math Club Worksheet COMC Preparation #4)



Warm Up: Evaluate the expression. No Calculator: $\sqrt{3+2\sqrt{2}}-\sqrt{3-2\sqrt{2}}=?$

Question: In a stack of logs, each row has exactly one fewer log than the row below. With 9 logs, the tallest possible stack is 4 at the bottom, 3 logs in the second row and 2 logs on the top row, making a total of 3 rows. With 2015 logs how many rows are there in the tallest possible stack? (Australian Math Comp)
Question: can you find the sum of all the distinct roots of "x" satisfying the equation below: $ \left(x^2 + x - 2 \right)^3 + \left(2x^2 - x - 1 \right)^3 = 27 \left(x^2 - 1 \right)^3 \text{ India Regional Mathematical Olympiad} $

Determine all triples (a,b,c) of positive integers such that each of the numbers below is a power of 2:

$$ab-c$$
, $bc-a$, $ca-b$

(Thailand Math Olympiad)