

Puzzle Corner

Allan Gottlieb, '67

Address all correspondence to:

Kid's Place
 Baker 438
 362 Memorial Drive
 Cambridge, Massachusetts 02139

Several readers have sent problems and solutions to me; they will all appear in next month's issue. Due to a variety of personal crises and a pleas from my editor to "keep it short this month", I shall dispense with the usual small talk and get right down to business.

problems

36 — Prove that for any even integer m greater than 2, there is an infinity of odd integers not the sum of a prime and a positive power (> 1) of m .

37 — Show that there are irrational numbers s and t such that s^t is rational.

38 — Assuming $f(n) = \sqrt{n + \sqrt{n + \sqrt{n + \dots}}}$ converges for all integers n , show that given any integer y there is an integer n such that $f(n)$ converges to y .

39 — For which positive values of a and c is $a^n \cdot n! > c \cdot n^n$ true for every positive integer n .

40 — What is the largest number of queens which can be placed on a chess board such that no three queens lie in a straight line. Any solution greater than 14 will be printed.

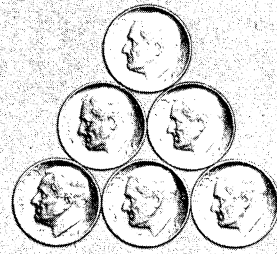


department

41 — Assuming that $B \cdot S$ is non nonzero, show that the following relation is impossible:

$$\begin{array}{r} \text{SEX} \\ + \text{IS} \\ \hline \text{BEST} \end{array}$$

42 — Consider six dimes forming a pyramid as below:



Change the figure into a circle by making four moves, each of which consists of sliding a dime to a new position where it is tangent to exactly two others.

solutions

There are no solutions in this month's installment since no problems appeared in the second previous issue. ■

SUBSCRIPTIONS

Tech Engineering News is published monthly October through May. A one year subscription via Institute Mail (which includes dormitories and fraternities) is only \$1.50. By United States mail, it is \$2.50.

Cut out and mail to Tech Engineering News, W20-453D, MIT, Cambridge, Massachusetts 02139.

Name _____

Address _____

Payment enclosed, or please send bill

Please start subscription with _____ issue.