HOW CAN ARTICULATION BETWEEN TWO YEAR AND FOUR YEAR COLLEGE BE IMPROVED? Merling Fischer, Iowa Community College, Fort Dodge, Iowa.

Due to the increasing role of the Community Colleges in Iowa, greater articulation is essential. The American Mathematics Association has a standing subcommittee on two year colleges, and there has been a survey of articulation in various States. The goals and work of the National Committee will be reviewed, and the survey will be summarized. Recommendation will be made for your consideration.

BOUNDARY VALUE PROBLEMS AND FUNCTIONS OF MATRICES. Walter Will, Decorah.

Functions of matrices are often encountered in the solution of initial value problems for systems of ordinary differential equations involving constant coeffecients. Two point boundary value problems for second order equations also lend themselves to functions of matrices. The expression

$$G(t,s) = \begin{cases} \dfrac{\sinh as \ \sinh a(t-T)}{a \ \sinh aT}, & 0 \le s \le t \\[2ex] \dfrac{\sinh at \ \sinh a(s-T)}{a \ \sinh aT}, & t \le s \le T \end{cases}$$

for the Green's function for the equation $y'' = a^2 y$ on the interval $0 \le t \le T$ extends to systems. In the latter case, G can be given in terms of eigenvalues and eigenvectors of the coefficient matrix.

The Bicentennial Puzzle

D. Greenwell
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A theorem of graph theory is used to develop a variety of games similar to the well-known 15-puzzle. One such is a bicentennial puzzle.

OPTIMAL STRATEGIES FOR RED-AND-BLACK CASINOS.
Stuart Klugman, University of Iowa.

At each play a red-and-black gambler may stake any part or all of his current fortune. With probability w the fortune is increased by the stake and with probability $1-w$ the stake is lost. The game continues until the gambler's fortune reaches a specified goal or becomes zero. Optimal strategies for several versions of the game will be discussed, including (i) subfair ($w < 1/2$), (ii) fair ($w = 1/2$), (iii) superfair ($w > 1/2$), (iv) unknown w, and (v) minimum expected time.