81T-A9 J. DONALD MONK, University of Colorado, Boulder, Colorado 80309. Remarks on Boolean algebras: complete embeddings, independence, tightness. Preliminary report.

Theorem 1. There exist non-isomorphic complete BA's A, B such that each can be completely embedded in the other. (This answers a question of T. Carlson.) Theorem 2. For each $\kappa \geq \omega$ there is a BA A with no uncountable free subalgebra such that ${}^{\omega}A$ has a free subalgebra of size κ. For the notion of tightness of a topological space, see Engelking's book; we apply it also to the dual BA. For any limit κ there is a BA of tightness κ not attained. But if κ is singular with $\mathrm{cf}\kappa = \omega$ then any BA of tightness κ has a free sequence of type κ, although when $\mathrm{cf}\kappa > \omega$ there are examples of non-attainment even in the free sequence sense. The algebra A of Theorem 2 has tightness $\aleph_0$; since independence(A) $\leq$ tightness(A) , this shows that ${}^{\omega}A$ has tightness $\geq \kappa$. (independence(A) = sup of cardinalities of free subalgebras of A.) (Received September 22, 1980)

*81T-A10 G.J. Rieger, Universität, D-3000 Hannover. On Farey-Ford triangles.

For every rational number in reduced form h/k, denote by C(h/k) the open circular disc (=Ford circle) in the cartesian plane with center $(h/k,\ 1/(2k^2))$ and radius $1/(2k^2)$ (see e.g. G.J. Rieger, Zahlentheorie. Vandenhoeck und Ruprecht, Göttingen 1976; p. 140-142). Different Ford circles are disjoint and have a point of contact if and only if they belong to neighbors $a/b < c/d$ in a suitable Farey sequence F_n ; the points (a/b,0), (c/d,0), and the point $((ab+cd)/(b^2+d^2), 1/(b^2+d^2))$ of contact form a right triangle $T_n(a/b)$ (= Farey-Ford triangle). Denote by L_n the length of the polygon joining (0,0) with (1,0) along the legs of all $T_n(a/b)$ with $a/b \in F_n \cap [0,1[$. Obviously, $1 < L_n < \sqrt{2}$. Theorem 1. There exists a real number α ($\approx$ 1,28) with $L_n = \alpha + O(n^{-1}(\log n)^2)$ $(n > 1)$. We define the measure of a right triangle as height/hypothenuse. The measure $M_n(a/b)$ of $T_n(a/b)$ is $bd/(b^2+d^2)$. Theorem 2. The arithmetical mean of $M_n(a/b)$ with $a/b \in F_n \cap [0,1[$ is $\beta + O(n^{-1} \log n)$ with $\beta := 2 \iint xy(x^2+y^2)^{-1} dxdy$ $(0 < x < 1,\ 0 < y < 1,\ x+y > 1) = \log 2 + 1/2 - \pi/4$. (Received September 22, 1980)

*81T-A11 PRABIR DAS, Indian Statistical Institute, Calcutta 700 035, India. Characterization of unigraphic and unidigraphic degree sequences.

By degree of a vertex u of a digraph we mean the ordered pair ((outdegree of u), (indegree of u)). Thus the degree sequence for both graphs and digraphs is the sequence of the degrees of the vertices. In this paper we characterize unigraphic degree sequences and, as a corollary, pairs of sequences with unique realization by bipartite graphs. These characterizations are alternate to those obtained by Koren in J. Combin. Theory 21B (1976), 224-234 and 235-244. Then we obtain characterizations for unidigraphic degree sequences and, as a corollary, for pairs of sequences with unique realization by bipartite digraphs. (Received September 24, 1980)

*81T-A12 P. M. DEARING and NANCY V. PHILLIPS, Clemson University, Clemson, South Carolina 29631. Finding a minimum dominating set of a chordal graph.

We present three polynomial time algorithms to find a minimum dominating set [MDS] for a finite, simple undirected chordal graph. Two are applied to the graph and one to the node-node adjacency matrix representing the graph. Two are dual algorithms in that they construct a MDS by adding nodes until a feasible dominating set is obtained, while the third is a primal algorithm in that it starts with a feasible dominating set and deletes nodes until a MDS is obtained. (Received September 29, 1980) (Authors introduced by R. E. Jamison)

*81T-A13 GLENN HOPKINS, The University of Mississippi, University, Mississippi 38677 and WILLIAM STATON, The University of Mississippi, University, Mississippi 38677. Extremal bipartite subgraphs of cubic triangle-free graphs.

Theorem: If G is a cubic graph with n vertices and if G contains no triangle, then there is a spanning bipartite subgraph H of G such that H has at least $\frac{6n}{5}$ edges.

Examples are cited to show that this result is best possible. (Received September 29, 1980)