

but stronger than bounded pointwise convergence. A sequence  $f_n \in L^\infty$  is said to converge strictly to  $f \in L^\infty$  if  $f_n \rightarrow f$  pointwise and  $\sum |f_{n+1} - f_n| \in L^\infty$ . Strict convergence is stronger than bounded pointwise convergence so any weak \* closed subspace of  $L^\infty$  is closed under strict convergence. If  $S \subseteq L^\infty$  is a weak \* closed subspace and  $\Lambda$  is a linear functional on  $S$ ,  $\Lambda$  is called strictly continuous if whenever  $f_n \rightarrow f$  strictly then  $\Lambda(f_n) \rightarrow \Lambda(f)$ . It is clear that any linear functional  $\Lambda$ , where  $\Lambda(f) = \int f\varphi \, dm$  with  $\varphi \in L^1$  is strictly continuous. The proof of the Mooney-Havin theorem now follows from two key facts. (i) If  $\{\Lambda_n\}$  is a sequence of strictly continuous linear functionals on a weak \* closed subspace  $S \subseteq L^\infty$  and if  $\Lambda(f) = \lim_{n \rightarrow \infty} \Lambda(f_n)$  exists for all  $f \in S$  then  $\Lambda$  is strictly continuous; (ii) if  $t_n \rightarrow 0$ ,  $t_n > 0$ , then  $f/(1 + t_n h) \rightarrow f$  strictly.

There are many other topics covered in these notes that I have not mentioned. For example there is a chapter on imbedding analytic discs and a chapter on rational approximation.

The material is well organized and carefully presented. Many of the proofs are extremely elegant.

PATRICK AHERN

BULLETIN (New Series) OF THE  
 AMERICAN MATHEMATICAL SOCIETY  
 Volume 1, Number 1, January 1979  
 ©American Mathematical Society 1979  
 0002-9904/79/0000-0013/\$02.75

*The theory of partitions*, by George E. Andrews, in *Encyclopedia of Mathematics and its Applications*, volume 2, Addison-Wesley Publishing Company, Advanced Book Program, London, Amsterdam, Don Mills, Ontario, Sydney, and Tokyo, 1976, xiv + 255 pp., \$19.50.

The serious study of partitions probably started when Euler was asked how many ways fifty could be written as the sum of seven summands. From this modest beginning a beautiful field has grown up that has connections with a number of different areas of mathematics.

Ferrers, in a letter to Sylvester, observed that it was possible to represent a partition by an array of dots. For example,  $7 = 4 + 2 + 1$  is represented by

$$\begin{array}{cccc} \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & & \\ \cdot & & & \end{array}$$

A large number of identities can be proved by suitably counting the dots in a Ferrers graph. One beautiful example is F. Franklin's proof of the following result of Euler.

Let  $P_n(D, e)$  denote the number of partitions of  $n$  into an even number of distinct parts and  $P_n(D, o)$  the number of partitions of  $n$  into an odd number of distinct parts. Then

$$P_n(D, e) - P_n(D, o) = \begin{cases} 0, & n \neq k(3k \pm 1)/2, \\ (-1)^k, & n = k(3k \pm 1)/2, k = 0, 1, \dots \end{cases} \quad (1)$$

This proof is given in Chapter 1 and anyone who is interested in seeing how mathematics can be done without having to introduce many definitions