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ABSTRACT

Findings indicated that if the number and length of microteaching lessons were increased, one could expect student teachers to increase competence in establishing and maintaining student verbal expression in the classroom. Sixty junior secondary education majors were randomly assigned to one of two groups. Group A had two quarters of microteaching, while Group B had one quarter of microteaching and one quarter of high school teaching. During the first quarter microteaching sessions lasted 5 minutes; during the second quarter they were increased to 10 and 15 minutes. Videotapes of each student teacher were coded using Flanders Interaction Analysis System. Both the number of lessons and the time per lesson brought significant change in behavior in the areas of teacher lecture, questions about information, content, and student involvement in classroom situations. [Not available in hardcopy due to marginal legibility of original document.] (RT)

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Research Report

A COMPARISON OF VARIED TIME PERIODS OF MICROTEACHING IN THE DEVELOPMENT OF INTERPERSONAL RELATIONSHIPS IN TEACHING

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U.S. DEPARTMENT OF

HEALTH, EDUCATION AND WELFARE

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CHAPTER I

INTRODUCTION

One of the primary goals of teacher education is to analyze the capacity of the student teacher to control her teaching behavior. (Joyce and Hodges, 1966). At Stout State University, individualized clinical experiences of student teachers in Home Economics which provide for self-growth are critically needed. Among these is micro-teaching in which the student teacher has immediate feedback in order that she may appraise alone, with an instructor and/or a peer group, her own behavior and that of students. The student teacher then has the opportunity to initiate change in her own behavior in order to bring about change in pupil behavior.

STATEMENT OF THE PROBLEM

The present study was undertaken to determine the extent to which each student teacher establishes and maintains interpersonal relationships which involve high school students in their learning. Specifically, the purpose was to obtain information regarding the development of this competence through a varied number of micro-teaching experiences and lessons of varied time periods. The problem involved the following:

1. recording each micro-teaching lesson on tape,
2. replay for the student teacher and observer during which the observer tallied the teacher-pupil interaction,
3. critique on the performance and revision of lesson by the student teacher,

4. recording the reteaching of the lesson to another micro-class,
5. analysis of data, percentage of teacher talk and pupil talk, from the tallies on the Flanders' Interaction Analysis Matrix,
6. determining the significance of difference in varied time periods and number of lessons,
7. formulating implications for teacher education.

DEFINITION OF TERMS

Micro-teaching. Micro-teaching is the improvement of pedagogical skills with a scaled down sample of teaching, i.e., small groups of 3-7 taught in brief 3-7 minute single concept lessons which are recorded on videotape for reviewing, responding, refining, and repeating. Observation is limited to one skill at a time and can be analyzed quantatively as well as qualitatively. (Meier, 1968)

Flanders' Interaction Analysis System. Flanders' Interaction Analysis System is a quantitative and qualitative analysis of teacher-student behavior using ten categories for recording observations every three seconds. Teacher talk is classified as either indirect, maximizing the freedom of the student to respond or direct, minimizing the freedom of the student to respond. Student talk is classified as responding to the teacher and initiating talk. (Amidon and Flanders 1967)

Feedback. Feedback is the "communication of data absent the effect of a person's behavior on others back to that person". (Amidon and Flanders, 1967)

CHAPTER II

REVIEW OF LITERATURE

Research studies to date have dealt with establishing micro-teaching as a type of clinical experience in the training of teachers. The plan for this study was to select varied time periods, short of the conventional 55-60 minute period and compare the degree of competence obtained in one component of teaching; namely, establishing and maintaining pupil involvement.

This review of the literature is limited to the pre-service education of teachers and is reported in two parts:

1. use of new media and
2. systems for analysis of interaction.

The literature points to directed experiences with students as being crucial in the education of future teachers. Conant (1964) reported that he had not encountered any responsible group denying that practice teaching is an important part of a good program of teacher education though there are differing opinions about other components of teacher education programs. Hunter and Amidon (1968) point out that in the 1964-65 school year, 200,000 college seniors were involved in student teaching programs, almost three times the number a decade ago. It has been estimated that by 1970 more than 300,000 cooperating teachers will be needed. Because of the large number of student teachers and the problem of identifying large numbers of superior classroom teachers willing to work with student teachers, educators are currently examining the extent to which direct experience with pupils is feasible.

The past history of inquiry into research on teaching which has emphasized efforts at global assessment of teacher effectiveness have been characterized by many inconclusive or contradictory findings (Gage, 1963) and with virtually no impact on changing teacher education. It is little wonder that the effort to improve teacher preparation has therefore taken a micro-analytical approach designed to examine carefully small manageable segments of teacher education (Hermanowicz, 1969). According to Gage (1968) this approach appears to be a sound one.

Experimentation and innovation directly related to the future role of experience with students, which can occur throughout the professional sequence, as well as varying approaches to directed experience with pupils include the use of new media and a system for analyzing teacher-pupil interaction. The growing realization that the student teacher is an unfinished product who needs help and support is a healthy development in the teaching profession.

USE OF NEW MEDIA

New media in teaching which includes 8mm motion pictures, tape recorders, television, kinescope, and video-tape recorder have particular appeal at the present time because of the large number of student teachers who need guided learning and the possibilities which the media offer in providing immediate feedback about student performances in the teaching process.

A study at Hunter College (Schueler, Gold, and Metzel; 1962) compared three groups of student teachers under the supervision of the college supervisor. Comparison groups included those supervised by (1) direct

observation in the classroom, (2) closed circuit television, and (3) classroom television recordings. The last two groups of student teachers were able to view, with the college supervisor, the kinescope recording at a later time. Although, as indicated by rating scales devised, there was no observable difference in teaching performance attributed to the varying methods of supervision used, the students who participated in television recordings indicated they had considerable advantage in improving their teaching.

Other studies by Chabe (1962); Fulton and Ruper (1962); Schueler, Gold and Stroeller (1964); Stroeller, Lesser, and Freedman (1964); and Woodward (1964) support the contention that kinescope and live television are more effective and less time consuming than a direct observation procedure. One of the biggest weaknesses of such technology has been the noise interference in the classroom.

Bush and Allan (1964) introduced at Stanford University, the concept of micro-teaching or teaching of a scaled down lesson. These lessons are taught for periods of time varying from five minutes to thirty minutes with small groups of students. Students begin by teaching a single concept to a small group of children, view the results alone or with a college supervisor, and have the opportunity to reteach the lesson. Video-tape has the advantage of providing a means for a permanent record which can be viewed as often as desired to provide feedback for critical examination.

The approach of micro-teaching appears to offer a promising method for the study of effective teaching through micro-analysis of the teaching art. For some time perspective teachers have sensed that the quality and quantity of teacher-pupil interaction is a critical dimension of

effective classroom teaching (Amidon and Hough, 1967). The theoretical position as to the impact of the teacher upon pupil activities has received some verification especially through the work of Anderson and Brewer (1946) who found a high frequency of intergrative behavior of a teacher associated with high frequency of socially intergrative behavior in the children as well as with high frequencies in expression of spontanity and initiative. Furthermore, strong corraboration may be found in the work of Jersild (1941). The theory of the effect of certain kinds of actions upon pupil behavior is derived largely from the social learning concept of Dollard and Miller.

The process of interaction between teacher and pupils is arbitrarily considered to start with the behavior of the teacher. It would seem reasonable to attempt to derive insight from an integrated psychological theory of personality. Murray's (1938) postulated system of needs of basic personality variables appears to describe the needs and certain accompanying behavioral manifestations as a rich source of characteristic behavior which can be translated into classroom situations. In a study using the application of Murray's Theory (Cogan, 1956) the conclusion was made that measures of teacher behavior and pupil productivity might be of value in the development of a more adequate theory of the teaching-learning process.

Further support for the use of the video-tape in micro-teaching as a technique for the development and assessment of teacher-pupil interaction comes from learning theory as summarized by Meier (1968). The capacities of the individual learner (micro-teacher) are considered when the decision of what to teach is made. Several common principles deal

with motivation, one is that a motivated learner will learn more easily and the corallary of this is that excessive motivation may be detrimental. The cognitive and affective dissonance resulting when an individual sees himself in action will lead to intrinsic motivation which increases learning. The motivation to improve oneself appears to arise when the individual perceives the discrepancy between the ideal self-concept as a teacher and his real teaching behavior as he sees it played back on the monitor.

The principle of learning that the control of rewards is preferrable and the principle that success makes failure easier to tolerate are closely related. Through sensitive management it is possible to capitalize on the student teacher's assets and to minimize the liabilities insofar as possible.

Another principle is that goals have to be realistically set. It is important that the behavior to be reinforced or distinguished be a modifiable part of the person's functioning and one he is willing to change. Since more than one recording of an individual can be made, one element of modifiable behavior can be worked on at a time so the individual is not overwhelmed. Individuals differ considerably in their capacity to change; therefore, each individual capacity must be considered carefully in terms of how large a modification is to be accomplished in a given lesson. It must be remembered too, that one's previous experience and personal background may affect his ability to learn and to change a particular behavior pattern.

Two more related commonalities between micro-teaching and learning principles are that active participation by the student is preferred and that meaningful materials and tasks are desirable for optimal learning to occur. The principle that repetitive practice is necessary in over-learning skills is also manifest in this procedure.

Knowledge and information about performance aids the learner. This is probably the outstanding aspect of the use of replay of the video-tape recording. This is related to another principle that transfer will be better if the learner sees the relationship himself. Transfer of learning should therefore be maximized. Micro-teaching also makes use of the principle of spaced distributive practice and recall for learning.

The evaluation of the efficiency of behavior modification is contingent upon the criteria that has been identified by those involved in a given training situation (Bush and Allan, 1964). The maximum student teaching learning (defined as change in behavior and/or perception) is the ultimate criterion for assessing the teaching strategy under study.

Empirical studies of micro-teaching have been undertaken where this technique was used for varying purposes such as training of student teachers, in-service education of teachers, as well as improvement of teaching by interns or experienced teachers. Fortune, Cooper, and Allan (1967) reported that micro-teaching produced significant changes in teacher education candidates over a six-week period. Boyd et al. (1966) studied the effectiveness of three methods of preparation of student teachers in three training institutions. The group who received the entire micro-course including the tape recording and playback made more change in their behavior especially in conducting discussion lessons. In the Lagrange study of pre-service education for inner-city elementary teachers, it was found that micro-teaching proved to be a worthwhile contribution to pre-service preparation (Walsh, 1968). Allan and Ryan (1969) reported various successful uses of micro-teaching in the Stanford Research Project. Significant gains were found by Bell (1968) in the scores on the Teacher

Attitude Appraisal Scale where micro-teaching was added to the program for preparing student teachers than in the usual preparation provided for pre-service and student teaching experience. Micro-teaching has been used at Brigham Young University as a means of exploring micro-teaching in the pre-service education of teachers in providing more meaningful experiences at the under-class level (Webb, Baird, Belt, and Holder, 1968).

SYSTEMS OF ANALYSIS FOR INTERACTION

Interaction analysis is a technique for capturing dimensions of teacher verbal behavior in the classroom that is directly related to the social-emotional climate of the classroom.

It has been suggested that the use of interaction analysis could have important instructional implications for teacher education. Flanders, (1963); Joyce and Hodges, (1966); Medley, (1963); Ryans, (1963); Waiman, (1963) and Hough (1966) were among those who have developed techniques for observation useful for the development of a theoretical framework for the field of teacher education. Jalpert (1966) reported that systematic training in the evaluation of classroom instruction helped students to be more effective in evaluating their own behavior.

Teaching behavior can be identified and categorized from several vantage points or frames or reference. In one approach, the collector of data may insist that purely descriptive categories be used while others admit and argue for categories that employ evaluative judgement. Each frame of reference emphasizes some teacher behavior and neglects others. Furthermore, each method uses unique categories for discriminating teacher behavior. For instance, in Instructional Flexibility Training, (Joyce and Hodges, 1966), used three frames of reference, namely: (1) social climate referring

to the interpersonal relationship in the teaching situation, (2) content as it is handled by the teacher in the teaching situation, and (3) instruction in terms of teaching strategies.

Whitehall (1949, 1956) selected certain behaviors, seven categories, which occur between students and teacher but obviously left out specific cognitive behaviors that systems such as Smith and Meux (1962) use although the later system fails to take into account social interaction. Whitehall has stated that a teacher's verbal behavior is assumed to represent adequately her total behavior. In almost the same language, Flanders (1965) pointed out that the verbal behavior of the teacher is an adequate sample of her total behavior and that verbal statements are consistent with non-verbal gestures, in fact with the teachers total behavior. This assumption seems reasonable. However, Boyd and DeValult (1966) assert that it seems reasonable to assume that the burden of the proof of such an assumption rests with the researcher.

In sign observation, the observer is given a list of events to observe in the classroom and asked to check off those events which take place during a given period. One example is the Oscar Technique developed by Medley and Mitzel (1958). This system has the advantage of having the observation tied to concrete events and observers are asked to make a minimum of high level inferences. It suffers from the fact that the observation is tied to an arbitrary unit of time and cannot easily be adopted to the study of interaction.

Flanders (Flanders and Amidon, 1963) developed empirically a categorical instrument consisting of ten categories for interaction analysis, seven of which are assigned to teacher talk, two to student talk, and one to short periods of silence or confusion. Statements are classified as direct or indirect in terms of whether they tend to restrict pupils participation

through teacher opinions, directions, and criticism or expand participation through teacher praise or clarification of pupils feelings. Categories one through four indicate indirect influences; categories five, six, and seven represent direct influence while categories eight and nine provide a check on student participation. One weakness of the Flanders system is the interpretative analysis of possible interdependent acts (Boyd and DeVault, 1966). However, it is less complex and easier for student teachers to use than The Verbal Interaction Category System known as VICS of Amidon and Hunter (Amidon and Hough, 1969). The VICS has fourteen categories which are actually subdivisions of some of Flanders' categories. For example, asking of questions is divided into narrow questions and broad questions. The Observational System of Instructional Analysis of Hough (Amidon and Hough, 1969) is based on the Flanders' System but uses sixteen categories which were consciously organized to parallel the four part organization and category sequence of Flanders. The major contribution of the Observation System for Instructional Analysis lies in the potential for testing instructional hypothesis derived from learning theory.

The Flanders' Interaction Analysis has been used in a number of research studies in teacher education. Furst and Amidon (Amidon and Hough, 1969) did a study of elementary school teachers from three selected socio-economics levels. They found the amount of time spent in giving directions and in criticism decreased from the first to the sixth grades. Social studies teachers gave less directions than other subject matter areas. Upper-grade teachers apparently feel that it is important to spend a larger portion of class time in independent study and consider indirect influence to be important. Amidon and Grammatto (Amidon and Hough, 1969) studied behavior of superior elementary teachers. They concluded that

verbal patterns of superior teachers indicate they spend less time on teacher talk and were more accepting of student-initiated ideas. In a study of dependent-prone students in Geometry, Amidon and Flanders (1961) found that pupils taught by the indirect teacher learned more than those taught by the direct teacher with rigid, directed patterns of influence. Moskowitz (Amidon and Hough, 1969) studied teaching patterns of cooperating teachers and student teachers trained in the Flanders Interaction Analysis. It was found that trained cooperating teachers and student teachers who worked together used significally more indirect teaching patterns than untrained cooperating teachers and untrained student teachers who worked together. Trained student teachers used significantly more indirect teaching patterns than their untrained cooperating teachers while there was no significant difference between the teaching patterns of untrained student teachers and their trained cooperating teachers. Attitudes of the cooperating teachers toward teaching and toward their student teachers were more positive when cooperating teachers and their student teacners were trained. Zahn (Amidon and Hough, 1969) reported that the use of interaction analysis in the instruction and supervision of student teachers appears to be related to a positive change in the teaching attitude of the student. In a study of the effect of teaching interaction analysis to student teachers, (Amidon and Hough, 1964) found that student teachers who were taught interaction analysis were seen by student teaching supervisors as being more effective in their student teaching than those who had not been taught interaction analysis. In an extension of the work of Hough and Amidon, Furst (1965) found student teachers who were taught interaction analysis used significantly more accepting verbal behavior and questions and significantly less criticism

than student teachers not taught interaction analysis. Furst also found that those teachers who were taught interaction analysis scored more positively on the Teacher Reaction Test, a test shown to be predictive of success in student teaching (Hough and Duncan, 1965).

This summary of the literature provides the premises for the study design.

1. No studies were revealed in regard to the time effect of micro-teaching on the establishment of interpersonal relationships which bring about participation of students.
2. This component of teaching, interpersonal relationship, may be studied through micro-teaching.
3. The interaction between teacher and pupil can be categorized for analysis. Categories may be grouped as "Teacher Talk" and "Student Talk" identifying the type of interaction and amount of each type. As type and amount of interaction is identified, the degree of competency obtained by the student teacher is specified.
4. Intrinsic motivation to change behavior results when video-recordings are played back for the student teacher to see himself in action.

Competency desired was high pupil involvement. Ultimately the data will be analyzed for the means by which pupil involvement was effected. However, time did not permit such analysis for this report.

CHAPTER III

THE DESIGN

INTRODUCTION

The basic design for the study was an analysis of interactions in the classroom in which Flanders' Interaction Analysis System was used.

The time element given to establishing interpersonal relationships was significant in this study. The question is, will adding time to the present teach-reteach experience increase the teaching skills which establish and maintain interpersonal relationships which bring about student involvement?

Population. Ninety juniors who were prospective student teachers enrolled in Introduction to Teaching 442-304 in semester II, 1968,69 school year were chosen for the study. This group was divided with aid of a table of random numbers into three groups: (1) had two quarters of micro-teaching and no high school experience, (2) had two quarters of high school teaching and no micro-teaching, and (3) had one quarter of high school teaching and one quarter of micro-teaching.

The micro-training personnel consisted of two micro-classes of junior high school, two micro-classes of senior high school students, sixty student teachers, and faculty members with one graduate assistant who were trained to critique the micro-lessons. The Flanders-Amidon Kit for independent study of interaction analysis and the service of a faculty member from American Industry who is knowledgeable in the use of interaction analysis was available for staff consultation.

During the third quarter the student teachers were assigned at random for two five-minute teaching and two five-minute reteaching experiences.

Immediate feedback and critique of fifteen minutes were scheduled for each of the sixty student teachers. During the third quarter, one teach-reteach experience was with the junior high school students and one with the senior high school students. The micro-class scheduled for the reteaching was not the one used in the teaching experiences. The same organization was continued for thirty of these student teachers in the fourth quarter. During the third and fourth quarter, the proposal stated that thirty student teachers would be scheduled for three weeks each quarter at the high school. During the fourth quarter, the thirty student teachers who had only one quarter of micro-teaching were scheduled for three weeks at the high school. These student teachers were to be critiqued by two college faculty and each high school home economics teacher, however, this proved not to be a feasible use of teacher time so was discontinued in the first week. This changed the original proposal to observation and critiquing of sixty students. Group A had two quarters of micro-teaching. and Group B had one quarter micro-teaching and one quarter of high school teaching. The only restriction concerning concepts taught in the micro-lessons was that no single concepts be repeated It was felt that repetition could invalidate the experience for student involvement. It was recognized that many variables other than time could enter into the involvement of students in their learning but no attempt was made to consider them in this study.

Collection of Data. The data for the study were collected from replays of video-taped recordings of micro-lessons taught by the prospective teachers. The verbal behavior of teachers and students was tallied by number every three seconds, approximately twenty numbers per minute. These numbers were then transferred to a matrix for analysis.

Reliability of Observations. One college instructor and two graduate assistants were trained for collecting data using the Flanders' Interaction Analysis System. Before collecting data, these observers categorized behavior from a fifteen minute tape recording of a classroom discussion. They then discussed their disagreements. Also each observer checked an early tabulation with the last one recorded before collecting data. A further consistency check was made while collecting data. The interreliability rating indicated a high correlation between A-B, A-C, B-C for both "Teacher Talks" and "Pupil Talks".

Treatment of Data. The matrices for each lesson were analyzed for "Teacher Talk" (column one through seven) and "Pupil Talk" (column eight through nine). Refer to sample matrix page.

Two null hypothesis were tested for "Teacher Talk" and "Student Talk" in each lesson for Group A and Group B using the Chi Square test of significance. All were tested through the .001 level of significance.

Nine comparisons were made: lesson I groups A and B, Lesson II groups A and B, lessons I and II Groups A and B, lessons III and IV group A, lessons I and II group A, lessons I and II group B, lessons II and IV group A. Contingency tables are placed in the appendix.

The percentages of tallies in each cell were chartered on a line graph showing the percentage of "Teacher Talk and Student Talk" in each lesson for each student.

CHAPTER IV

THE FINDINGS

The findings of this study are presented in order of the two null hypotheses generating from the premises for the study design stated in Chapter III.

HYPOTHESIS I

There is no significant difference in the amount of student involvement with teachers in Group A when compared with teachers in Group B.

The hypothesis was accepted at the .05 level of significance for both lesson I and lesson II. The results are presented in Table I.

HYPOTHESIS II

There is no significant difference in the amount of student involvement with teachers in Group A or in Group B when varied time periods are compared.

1. The hypothesis was rejected at the .001 level of significance when lesson I was compared with lesson II for group A and for group B.
2. The hypothesis was accepted when lesson III was compared with lesson IV for group A.
3. The hypothesis was rejected at the .001 level of significance, when lesson I was compared with lesson III, lesson I with lesson IV, and lesson II with lesson IV.

The results are presented in Table I.

TABLE 1

Difference in Interaction in Varied Time Periods and Number of Micro-Lessons

	Lessons	Minutes	df	X^2	p
GROUP A					
	I and II	5 + 5	1	39.126	.000
	I and III	5 + 10	1	304.346	.000
	I and IV	5 + 10	1	348.570	.000
	II and IV	5 + 10	1	144.501	.000
	III and IV	10 + 10	1	2.505	.1096NS
GROUP B					
	I and II	5 + 5	1	87.406	.000
GROUP A & B					
	Lesson I	5	1	.673	.582NS
	Lesson II	5	1	6.794	.015

Thus it would appear that an increase in the number of lessons and in the length of lessons increased the amount of student involvement and decreased the amount of teacher dominance.

Analysis of the individual matrices and linegraphs (see appendices) indicated that some students did not appear to profit from the micro-teaching experience, i.e., they had less success in developing techniques which obtained student involvement than others. Reference to Table II shows that in group A, three actually had less participation in lesson IV than in lesson I. Table III shows that in group B, where each student taught only two lessons, eight students had less participation in lesson II than in lesson I.

In some instances, gains were made in student involvement in the reteaching but lost in teaching the next lesson.

Some students at the end of two lessons had as much student involvement as others at the end of four lessons.

Conclusions based on these findings are stated in Chapter V.

TABLE II

Percentage of Teacher Talk and Student Talk in Lessons I, II, III, and IV. Teach and Reteach for Group A

	I				II				III				IV			
	T		RT		T		RT		T		RT		T		RT	
	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S
1.	72	18	71	23	60	13.2	70	22.7	67.3	20.9	72	21.4	65.5	31.2	72.1	19.8
2.	89.2	7.2	82	11	75	14.3	77.9	12.5	67	14.4	68.9	17.8	66.5	33.7	65.2	27.6
3.	89.9	∞	45	4	92.2	.9	80	11.5	--	--	55.1	33	74.5	21.2	72.5	12.5
4.	66.7	13.9	79	12	68.1	24	60	20	70.5	18.4	66.7	29.6	70.5	25.5	66.9	24.1
5.	73	24.4	91	7.7	100	7.9	84.5	118	81.6	10.7	80.5	9.1	80	8.5	69	19.8
6.	66.2	28	71.9	25.6	83.5	10	63.9	34.5	--	--	40.5	60	45.3	48.9	45.3	46.8
7.	86.7	9.5	70	18	68.2	10.9	64.9	11.4	66	31.1	48	51	59	39.7	57.9	40
8.	82.5	12.9	51	12	77.8	141	73.1	21.7	73.1	23	--	--	70.5	28	70	255
9.	74.6	11.4	74	15	83.1	10.6	64.5	21.2	83	14	71.9	27.5	52.5	32.3	58.5	23.6
10.	65	25.6	63	26	63	20.4	57	32.4	74.5	23.6	42.5	56.4	46.5	48.5	57.5	39
11.	77.6	17.2	69	30	61.5	17.4	64.9	27	60	26.6	58.5	28.4	68.5	31.6	75.5	29.4
12.	85.6	9.6	81	15	80.6	14.8	82.1	12	89.9	6.7	81	16.7	71.5	22.5	63	23.5
13.	69.6	24.1	55	15	57.2	34	59.6	33.4	47.9	41.2	60.5	24.7	58	29.1	51	20.6

TABLE II cont.

14.	77.5	20.2	75	14	76.9	15.5	72	15.4	85.5	8.4	54	22.6	69	6.6	65	25.6
15.	87	10	75	14	75	15	74.9	21.9	71.3	22.4	68.5	21	64	24.9	64.2	24
16.	87.6	6.2	86	2	65	20	65.1	14.4	57.9	31.2	54.5	31.9	73.5	24.4	77.5	20.8
17.	84.9	5.4	77	21	60.6	33.3	73.5	22	67.4	24.3	78	17.1	--	--	61.5	36
18.	80	19	75	22	70.5	10.2	73	21.7	83.5	13.9	55.3	33.4	54	32.6	--	--
19.	67.3	8.2	68	15	70.9	9.1	55	7.2	54.5	40.9	61.3	39	58.5	39.1	58.8	39
20.	87	10.6	99.1	8	75	6.9	75	15.6	78.5	10.3	76.5	19	71.3	13.6	--	--
21.	76	17.2	75	17.2	82.3	9.6	75.7	14.3	82	9.2	72.1	12.8	82.5	10.9	--	--
22.	100	8	79.9	15.5	48.7	30	67.7	18.3	80.5	13.3	56	36.6	69.5	19.4	70.5	22.5
23.	84	12.2	82.5	13.6	83.1	15.8	80.5	18.4	67.3	20.9	61	28.4	77.1	21.3	81	15.4
24.	87.8	7.5	85.8	12.5	54	43.2	80.5	15.9	54.5	43.5	55.9	44.8	66	28.5	67.8	26
25.	65.5	26.7	70.5	22.3	63.6	20.9	65	13.8	81.5	12.8	61.3	31	80.9	15.9	65.9	32.9
26.	86.5	10.2	90.8	8.4	74.5	18.6	70.9	23.3	77	15	74	25.6	64	33	83	28.5
27.	72	25	93.4	13.2	73.1	17.6	69.9	25.9	62.1	35.3	60	33	67.5	22.7	62	32.7
28.	91.6	6.5	83	8	94	19.2	72.5	18.2	67.5	24	66	28.4	79	15.2	78.1	10.6
29.	67.3	20	60	25	75.5	6.5	72.5	9.8	65.9	18.2	53.9	31.5	64.1	23.3	62.5	28.5

TABLE III

Percentage of Teacher Talk and Student Talk in Lessons I and II, Teach and Reteach for Group B

	I				II			
	T		RT		T		RT	
	T	S	T	S	T	S	T	S
30.	85.4	5.6	71	28	50	46.4	73	19
31.	73.1	18.3	67	28	80.2	18.1	77.1	22
32.	95.4	0	69	22	86.1	11.3	75.5	21.8
33.	92.5	0	100	0	62.2	31.5	74.6	19.3
34.	94.2	2.3	65	40	70.3	13.5	60.9	27
35.	79.5	2.4	70	9	79.1	10.4	78.4	11.8
36.	97.7	0	64	31	89.4	3.8	85.7	3.6
37.	86.8	8.5	87	9	88	10.3	88.5	7.1
38.	96.5	0	76	13	84.5	12.7	75.8	20.2
39.	44.4	23.9	45	14	79.8	9.2	58.8	31.1
40.	78.1	11.4	82	9	75.9	17	71.5	18.7
41.	89	8	79	20	70.5	28	56	48.6
42.	90	7	86	13	86.5	7.4	72	21.2
43.	67	20	64	20	77.1	16.6	58.9	36.4
44.	82	15	84	12	91.2	15.2	76.2	22
45.	100	0	87	7	71.8	15.2	63	26
46.	56	36	44	34	36	21	32.3	54.5
47.	45	49	65	31	58.8	33.7	52	43
48.	97	0	85	10	77.5	17.9	50.5	43.5

TABLE III cont.

49.	87	12	83	17	69.1	28.3	64.5	30.5
50.	90	6	90	7	63	31.5	54.5	34
51.	50.5	32.4	72	16.4	91.1	8.6	89	6
52.	91.5	69	92.5	6.4	95	2.95	87	10.1
53.	70	10	96	28.3	53.5	7.4	72.7	12.5
54.	88.5	5.82	98.5	1.8	83.3	10.8	75	19.2
55.	98.5	0	69	20.3	97	1	92	5.1
56.	68	21.5	69.5	21.6	97	2	83	14.5
57.	45.7	27.2	72	14.1	91	6.1	66	32
58.	--	--	--	--	68.5	8	59.8	39.6

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

This study was designed to ascertain the change in teacher-pupil interaction from teacher dominance to student involvement in varied time periods and in the number of micro-lessons taught. The Flanders' Interaction Analysis System was used for observation of the verbal behavior of sixty student teachers.

No attempt was made to determine whether teacher influence on student involvement was direct or indirect.

Data were collected from video-taped lessons and tabulations were recorded on a matrix for analysis.

The findings revealed that both the number of lessons taught, and the longer time periods per lesson brought significant change in behavior from teacher lecture and questions about information and content to student involvement in classroom situations. This, if the number of lessons were increased as well as the length of lesson increased to ten minutes or fifteen minutes, one could expect student teachers to increase competence in establishing and maintaining student verbal expression in the classroom.

It was recognized at the beginning that other factors than time could be responsible for an increase in involvement and the findings appear to substantiate this assumption.

The lack of significant gain between lesson III, and IV could be due to a change in age groups. The first two lessons were taught with junior high school students. Lesson III and IV were taught with senior high school students. This appears to substantiate that age is a factor in techniques used in establishing set.

Some categories had many more tallies than others and some had no tallies. Therefore, an analysis of each category and groups of categories during critique sessions could reveal which teacher statements were an indirect and which a direct influence on student verbal behavior; also which ones tended to stimulate student talk. This would be a valuable guide to effecting improvement.

It was observed that an analysis of all cells in the matrices would reveal a teaching style which could be used as a basis for follow-through in off-campus student teaching and the first year inservice; observations being made by cooperating teacher and/or video-tape playback.

The concentration of tallies in categories four, questions; five, lecture; and eight, response to questions, indicates a direct influence which created a recitation interaction rather than student initiated talk or sustained student talk. Such interaction should be noted in critique.

Due to inadequate funding, these analyses for each student teacher could not be made at this time. Such an analysis is necessary for developing teaching skills and a teaching style which provides satisfaction in teaching and learning. It is recommended that such an analysis be made.

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APPENDIX

LEGEND

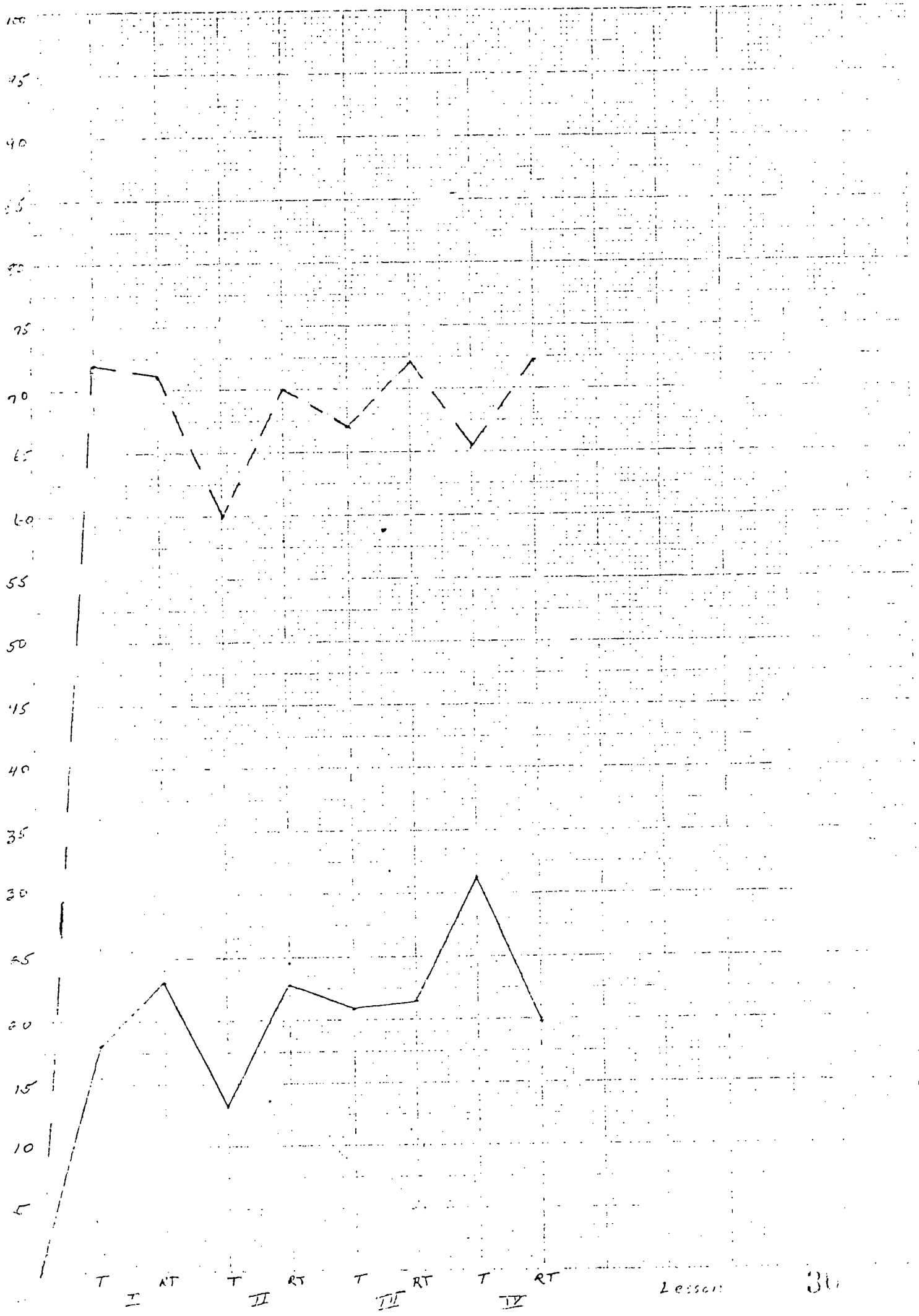
_ _ _ _ _ Teacher Talk

_____ Student Talk

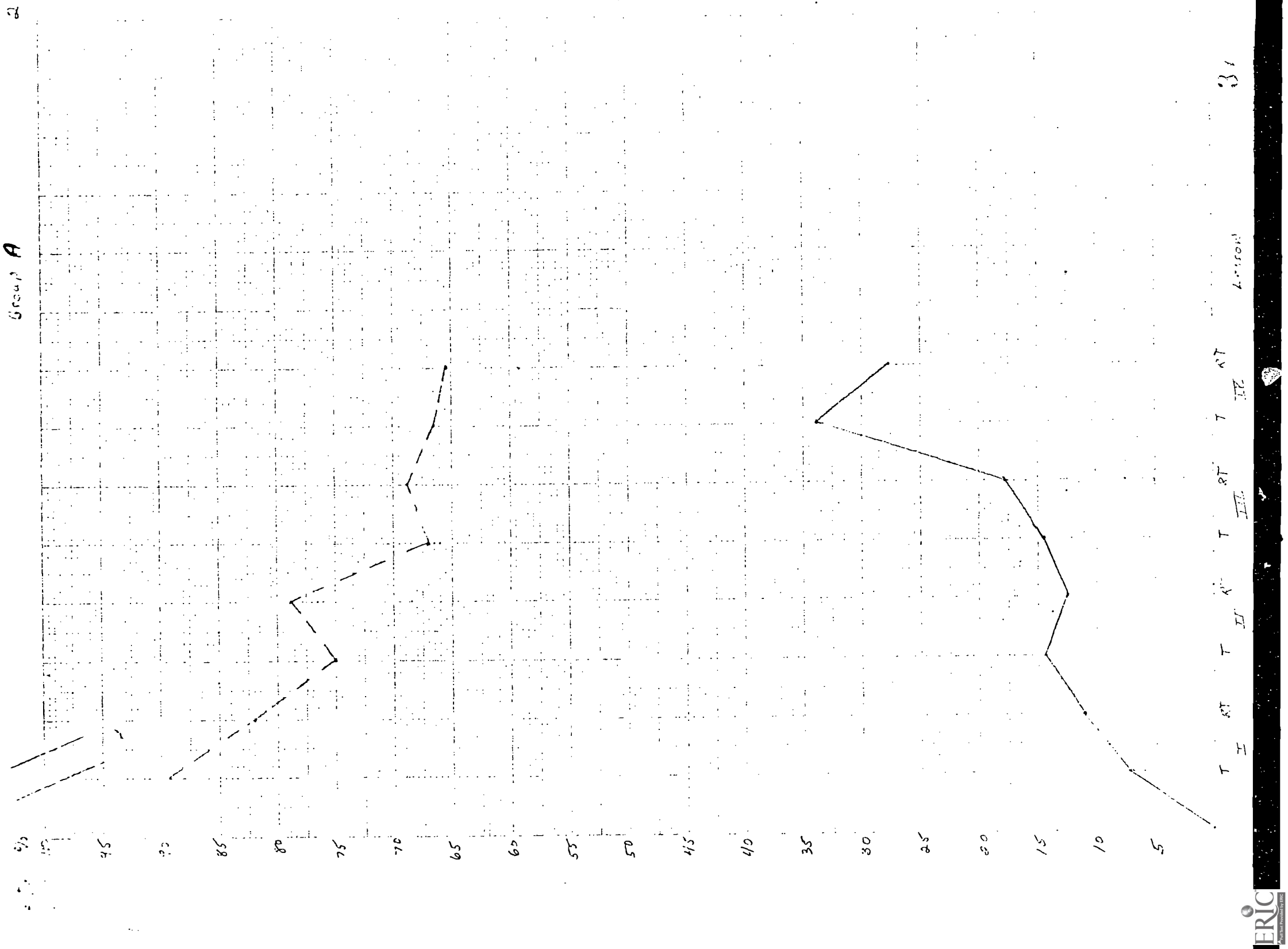
T = Teach

RT = Reteach

GROUP A



Lesson 31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T II
T III

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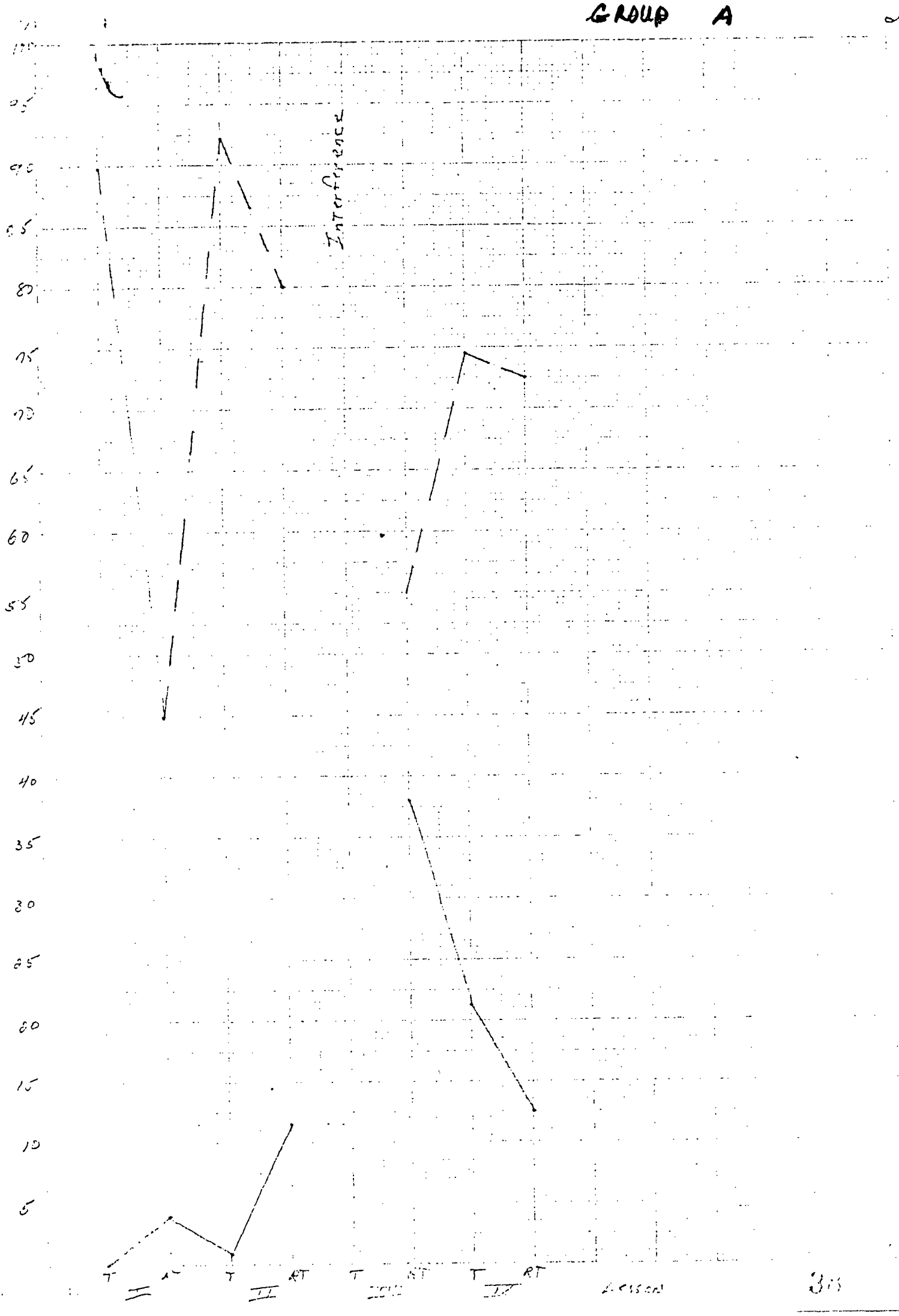
GROUP A



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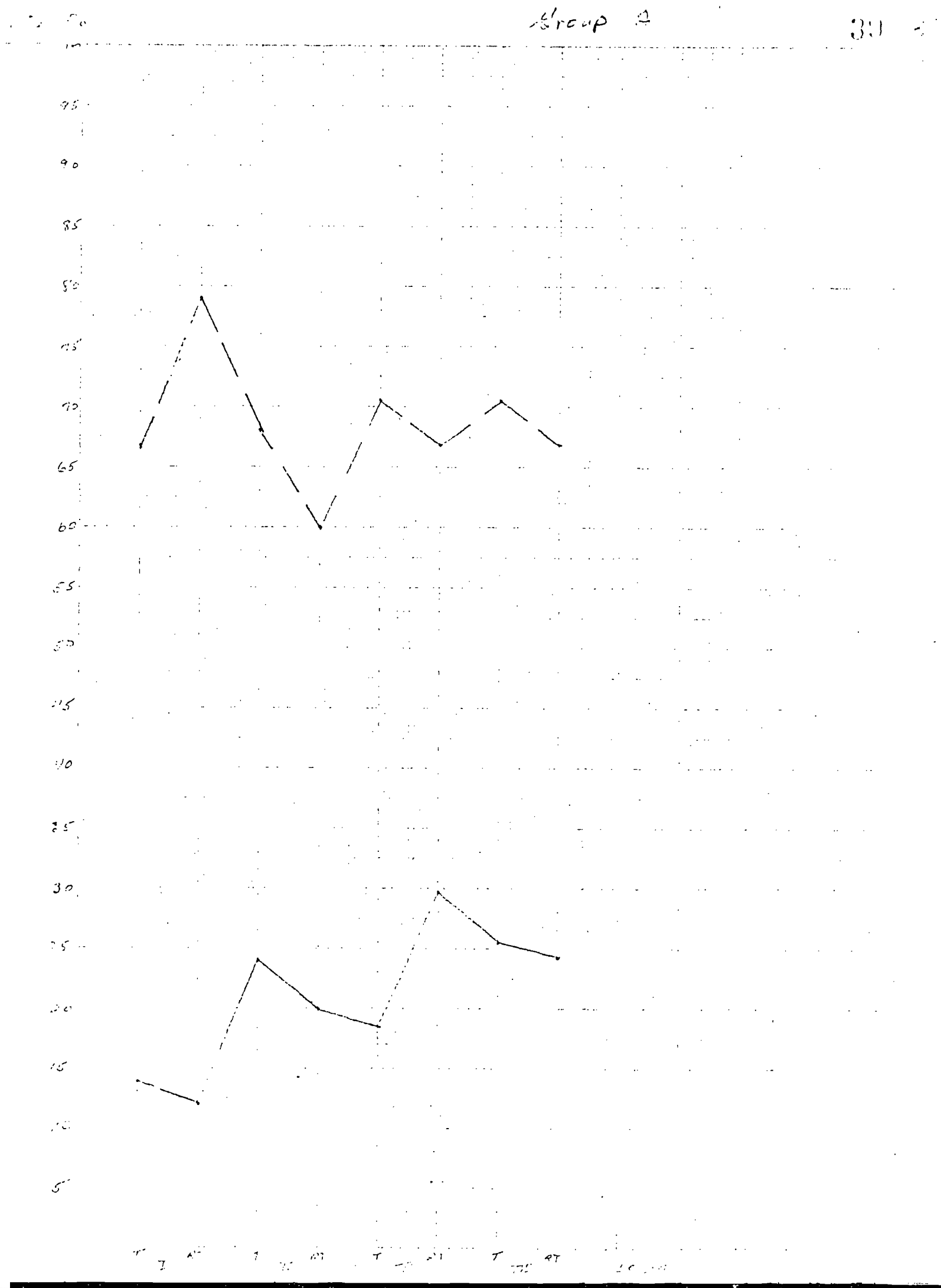
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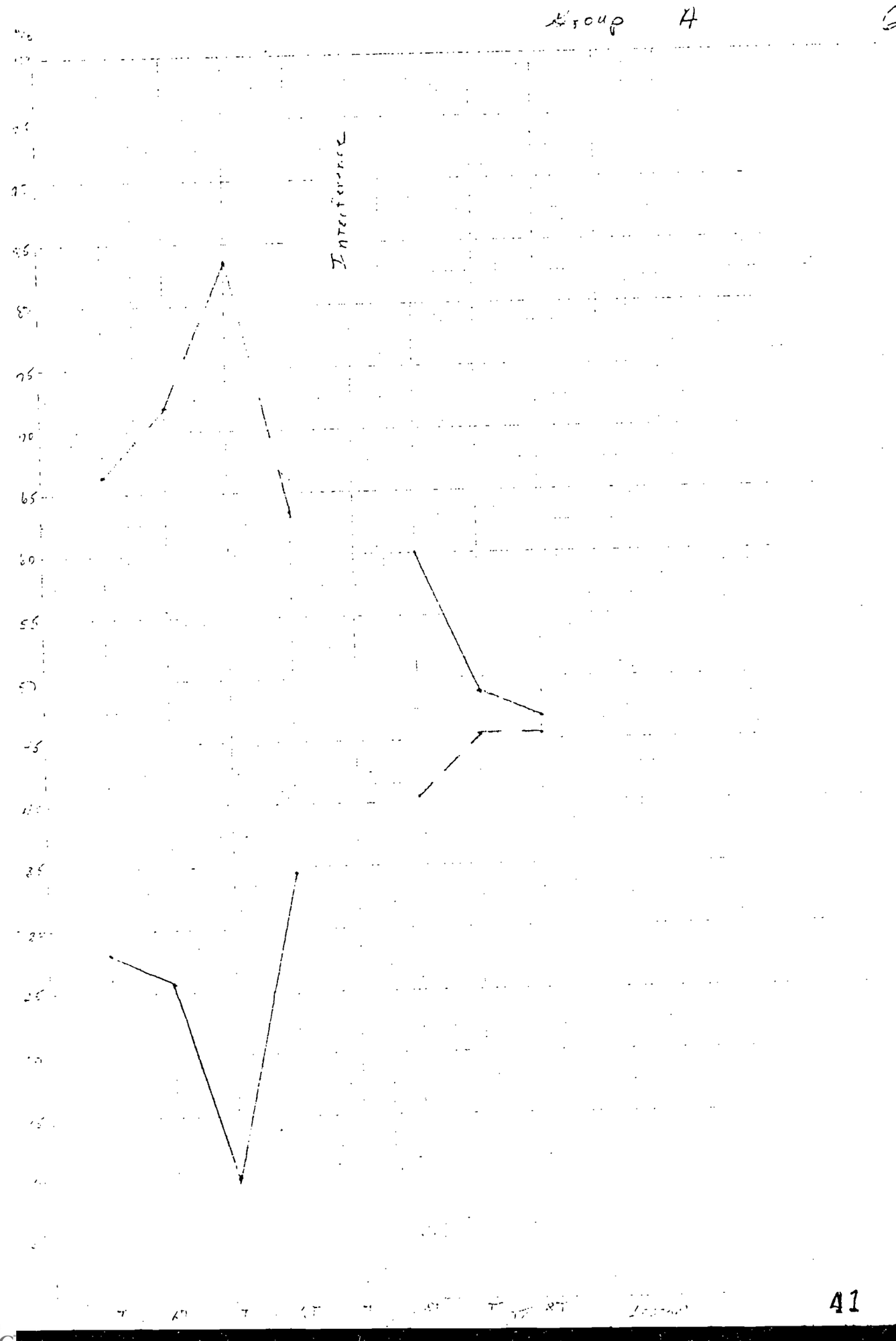
Group A (11) 5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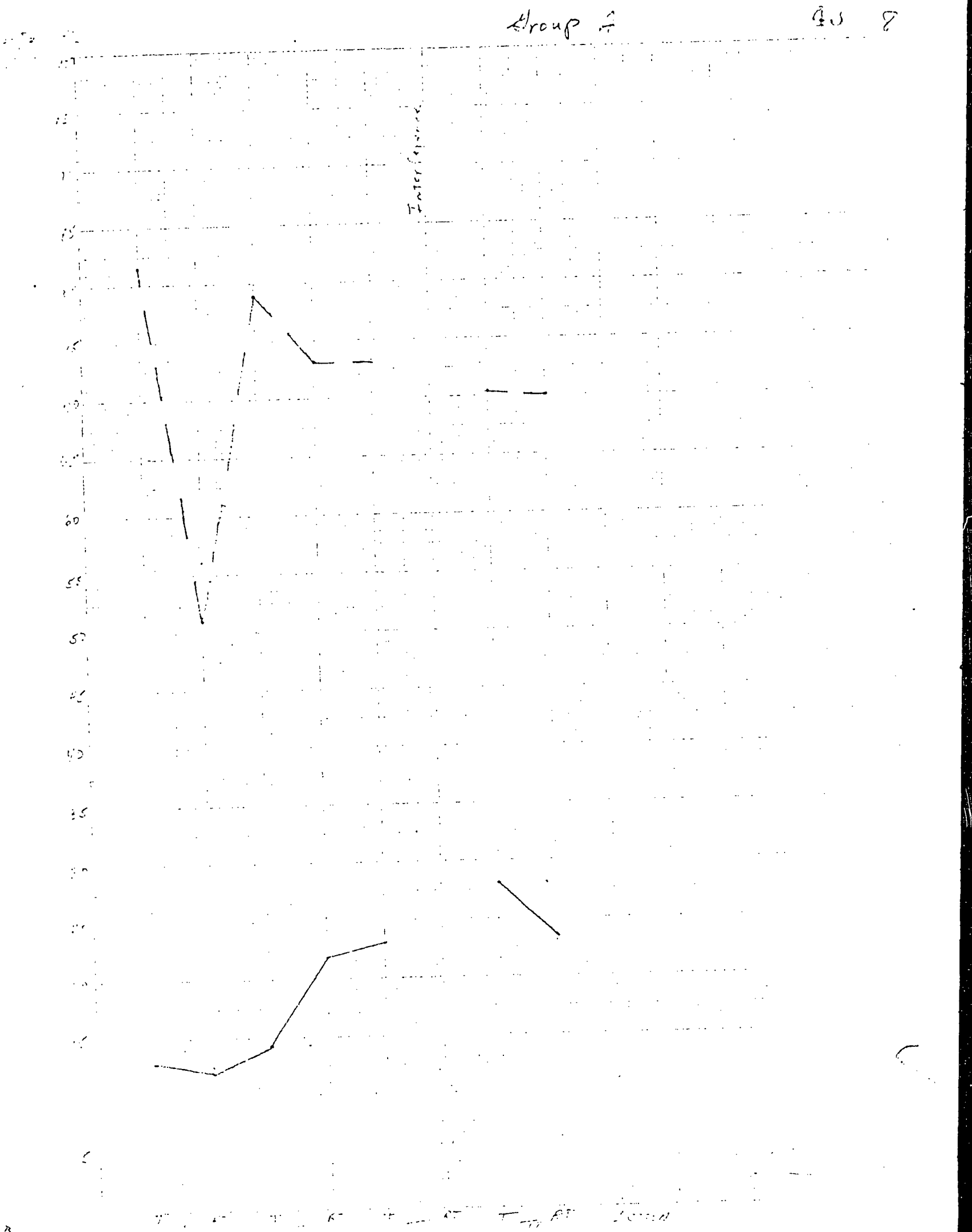
Intelligence

Group A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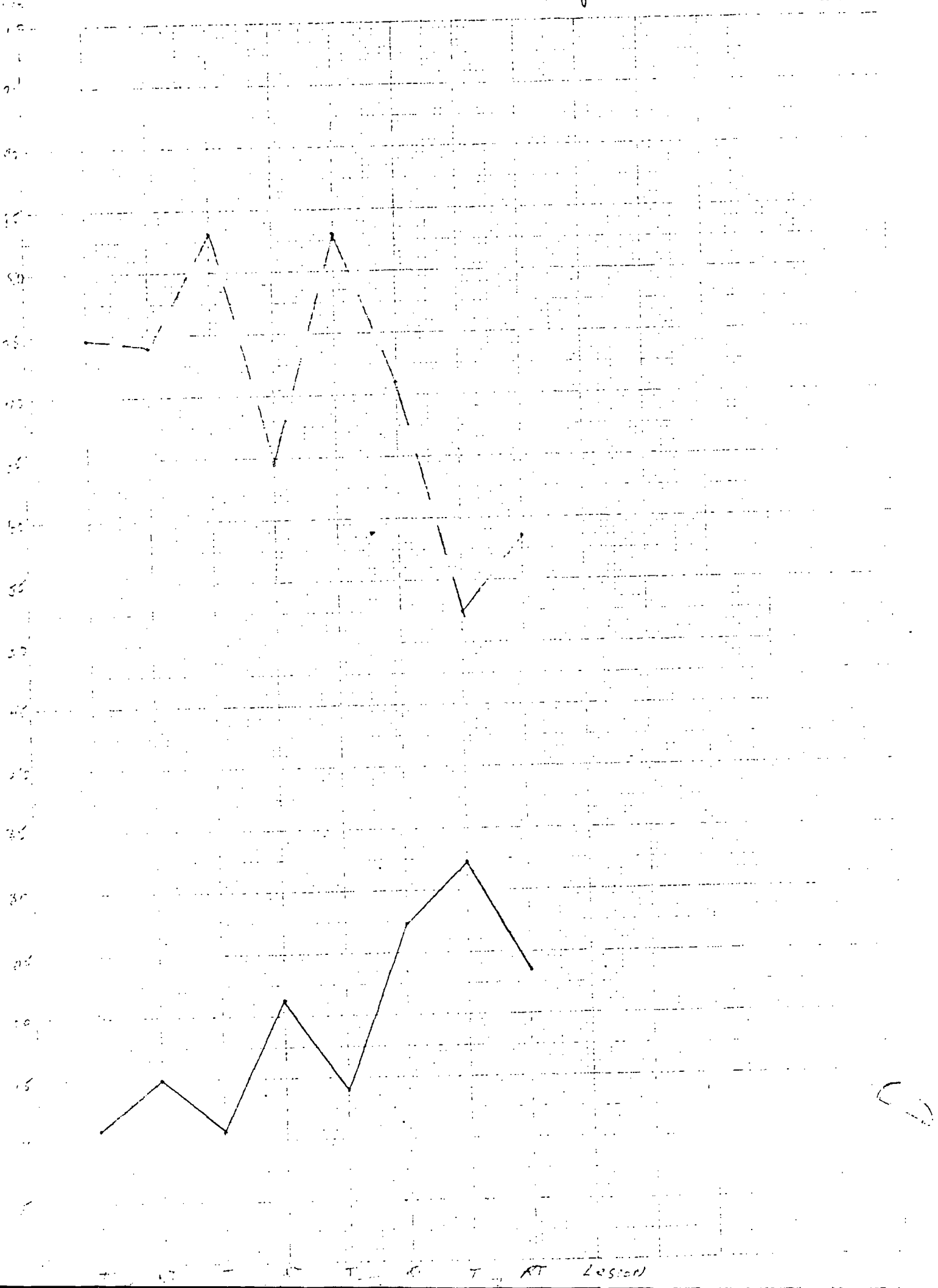

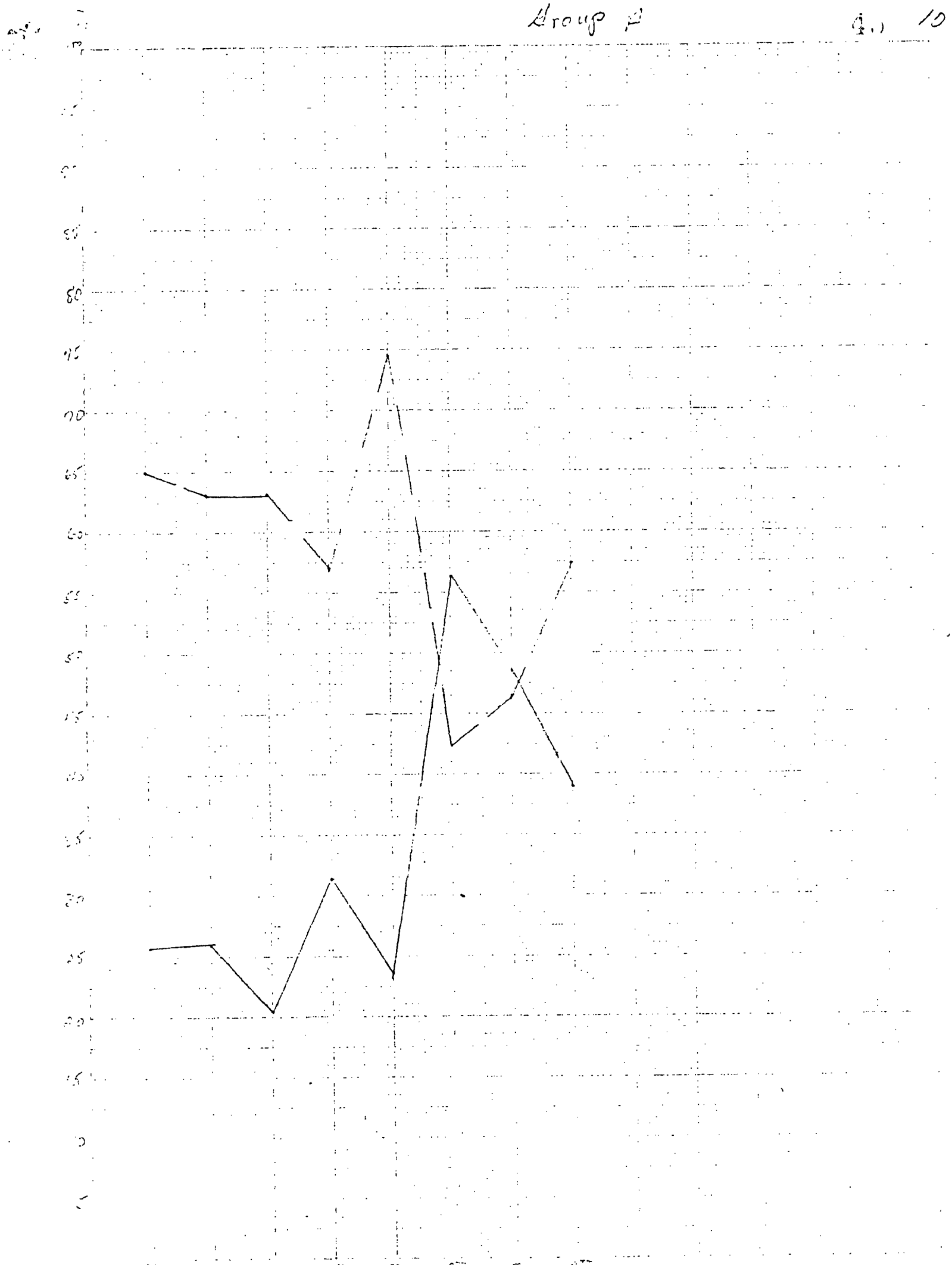
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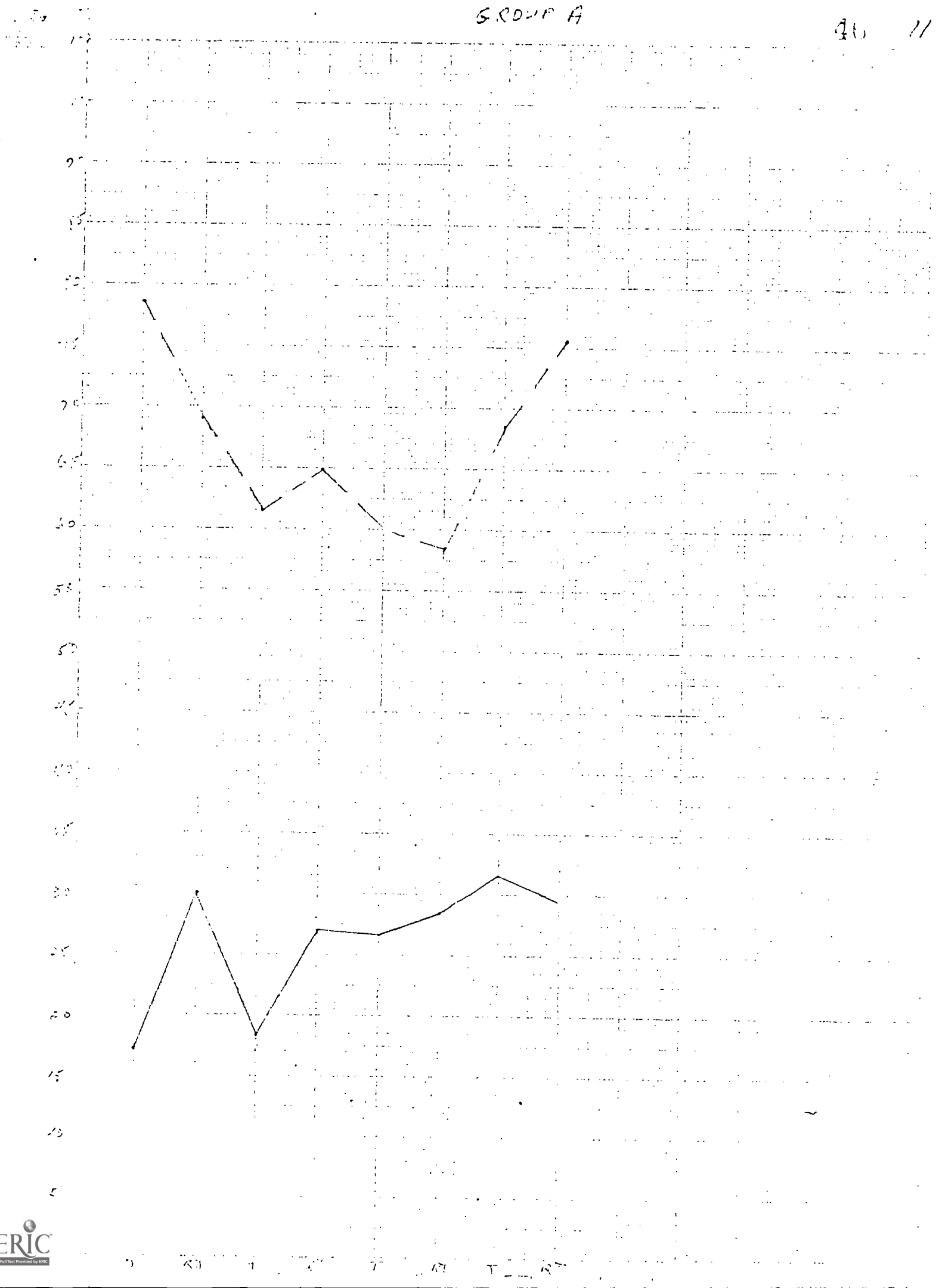
GROUP A


Group A

T RT T RT T RT T RT Lesson 31

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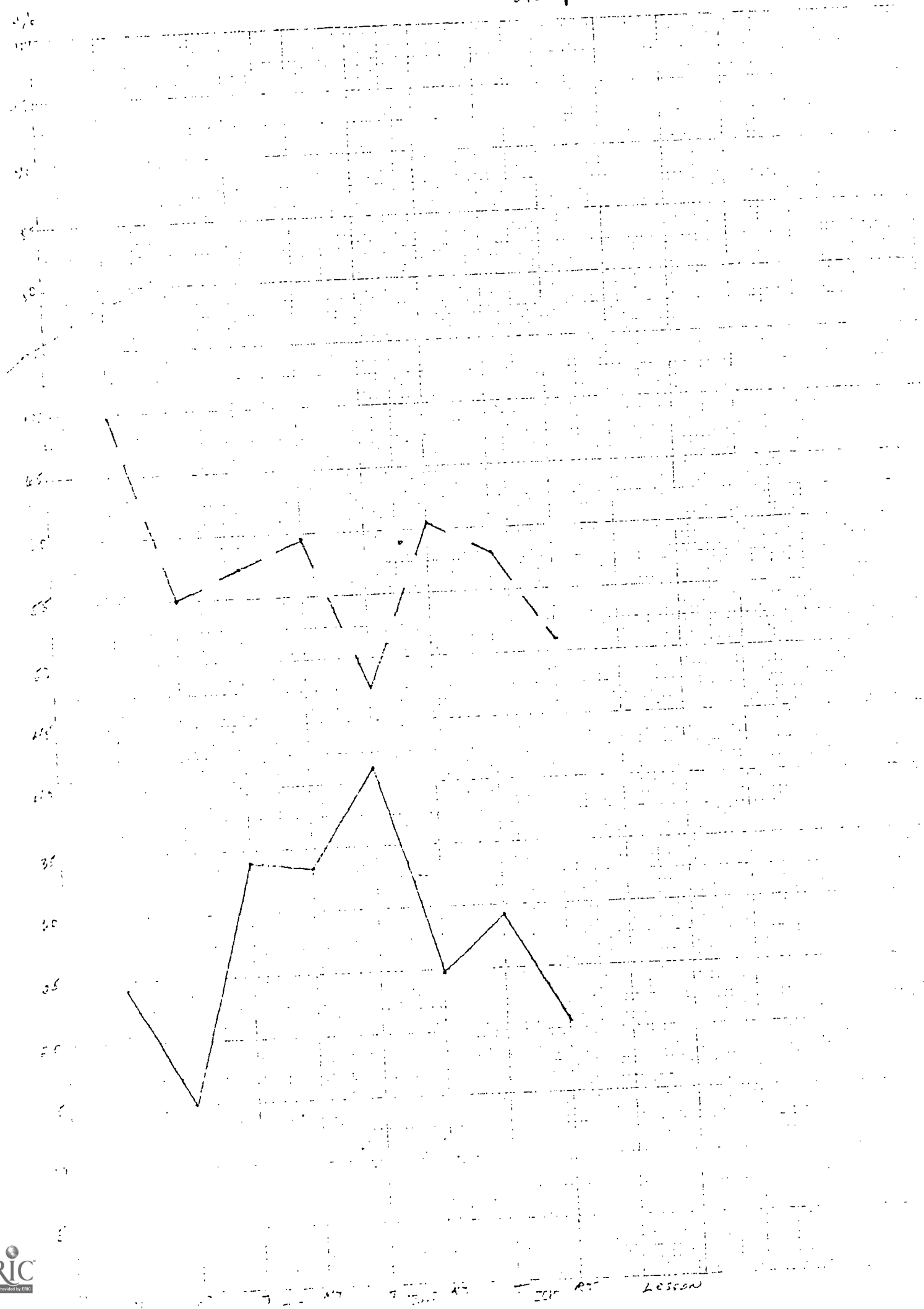
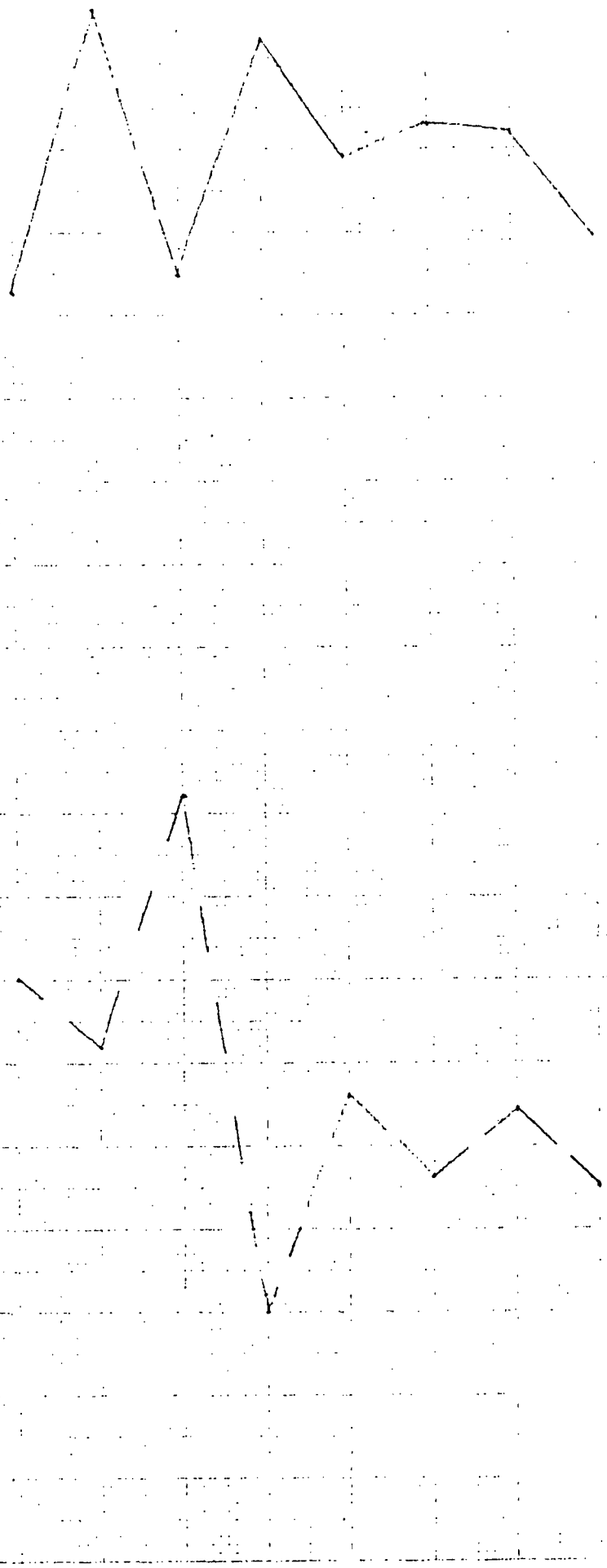
Group A





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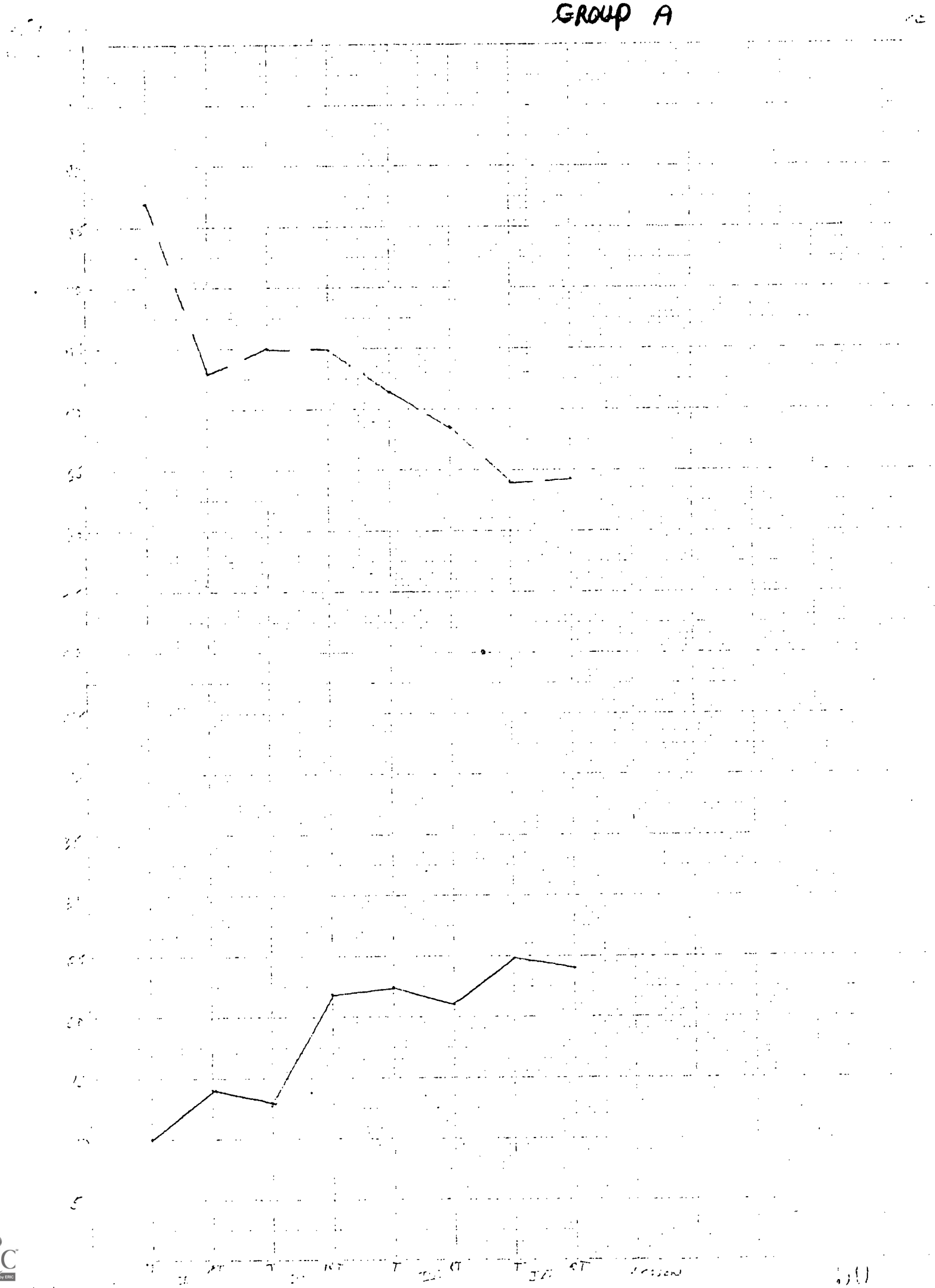

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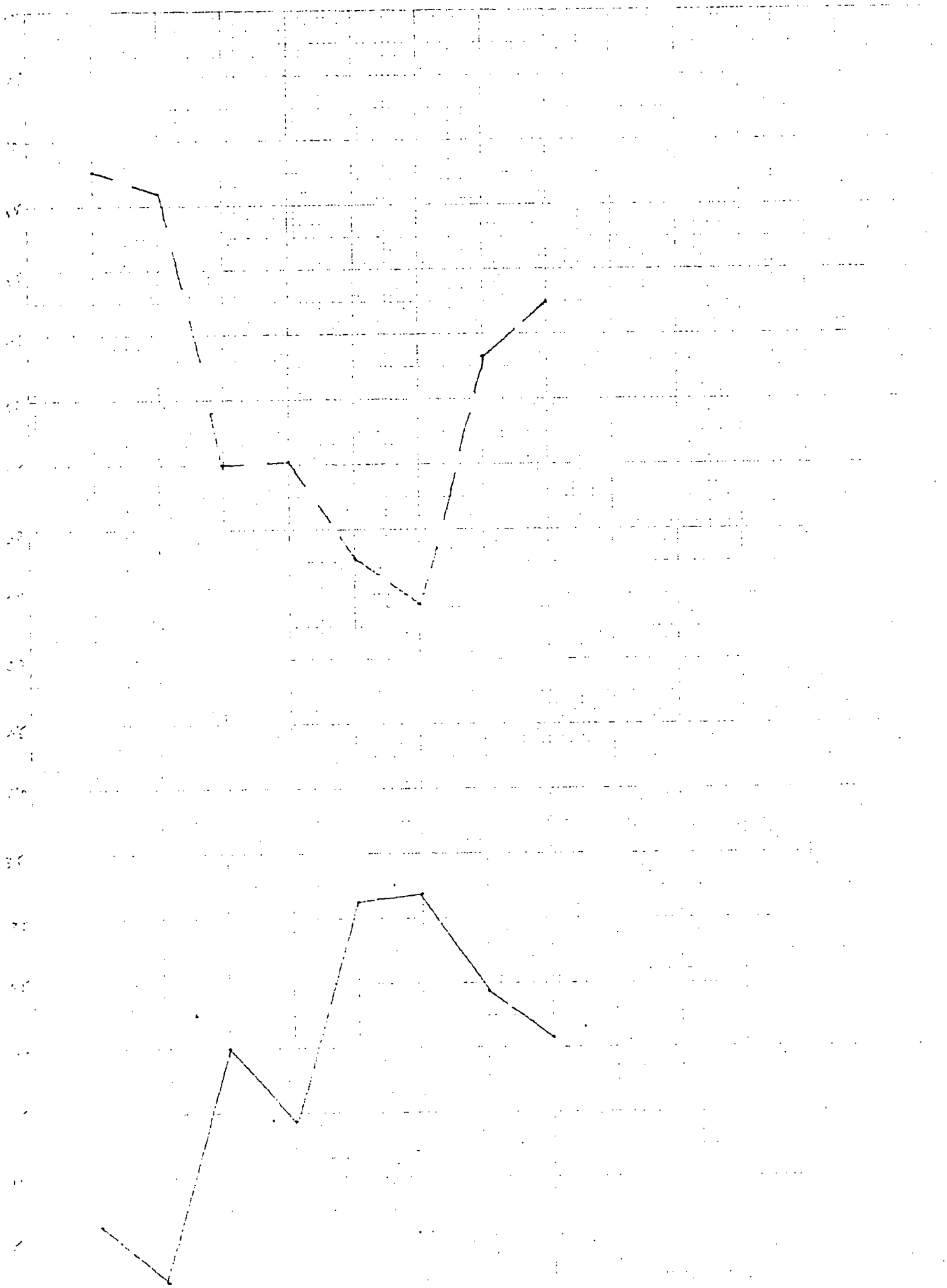

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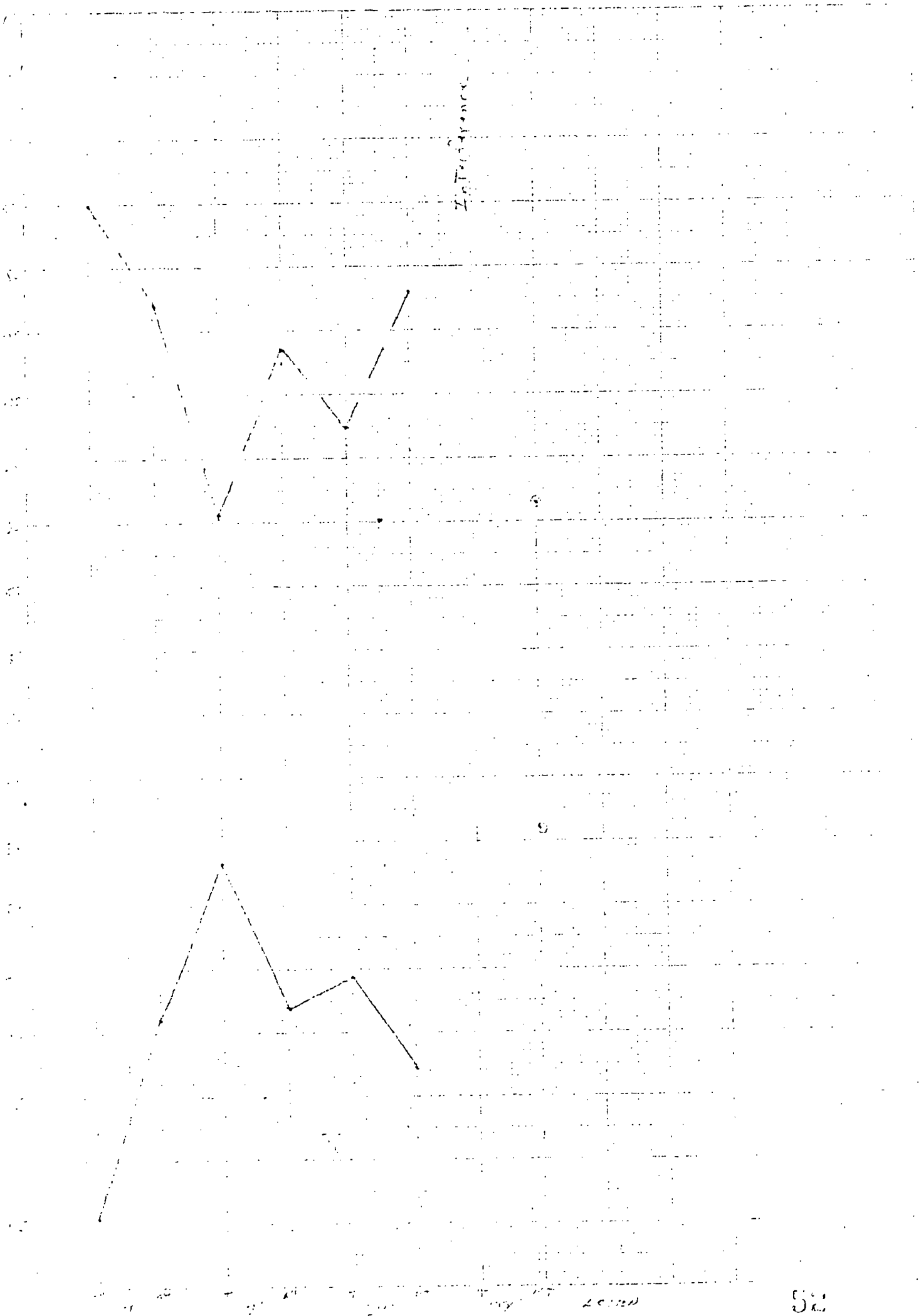

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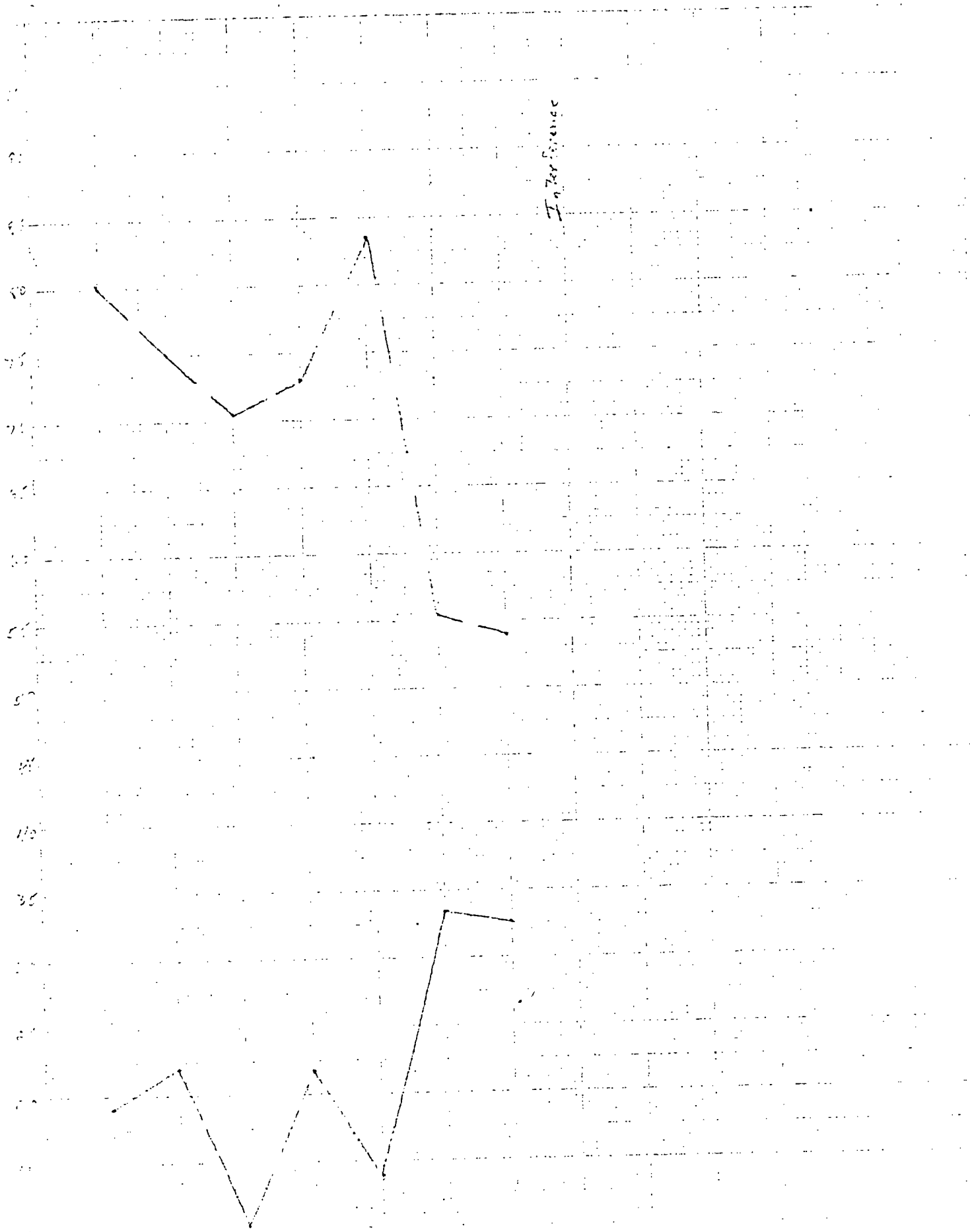

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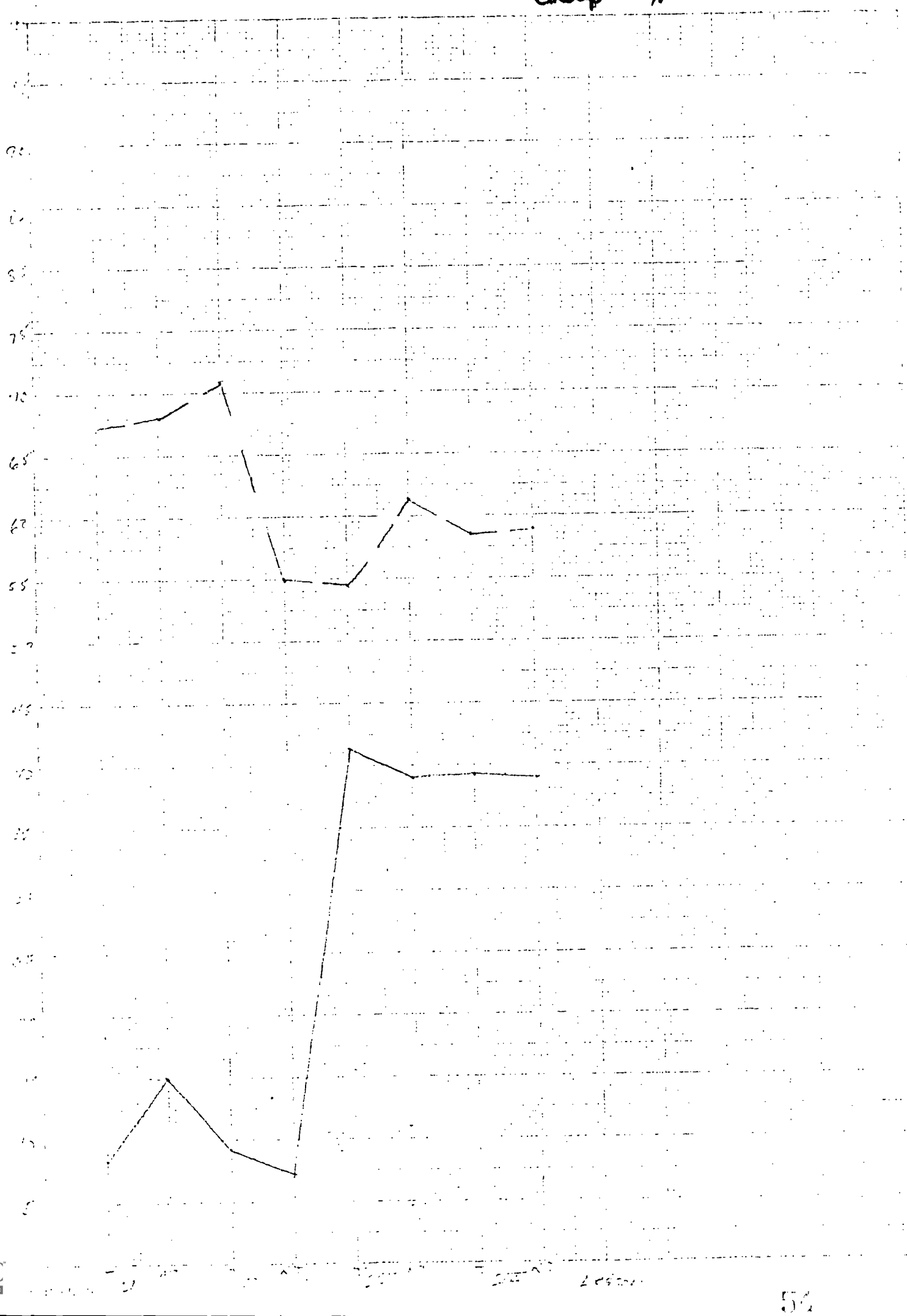

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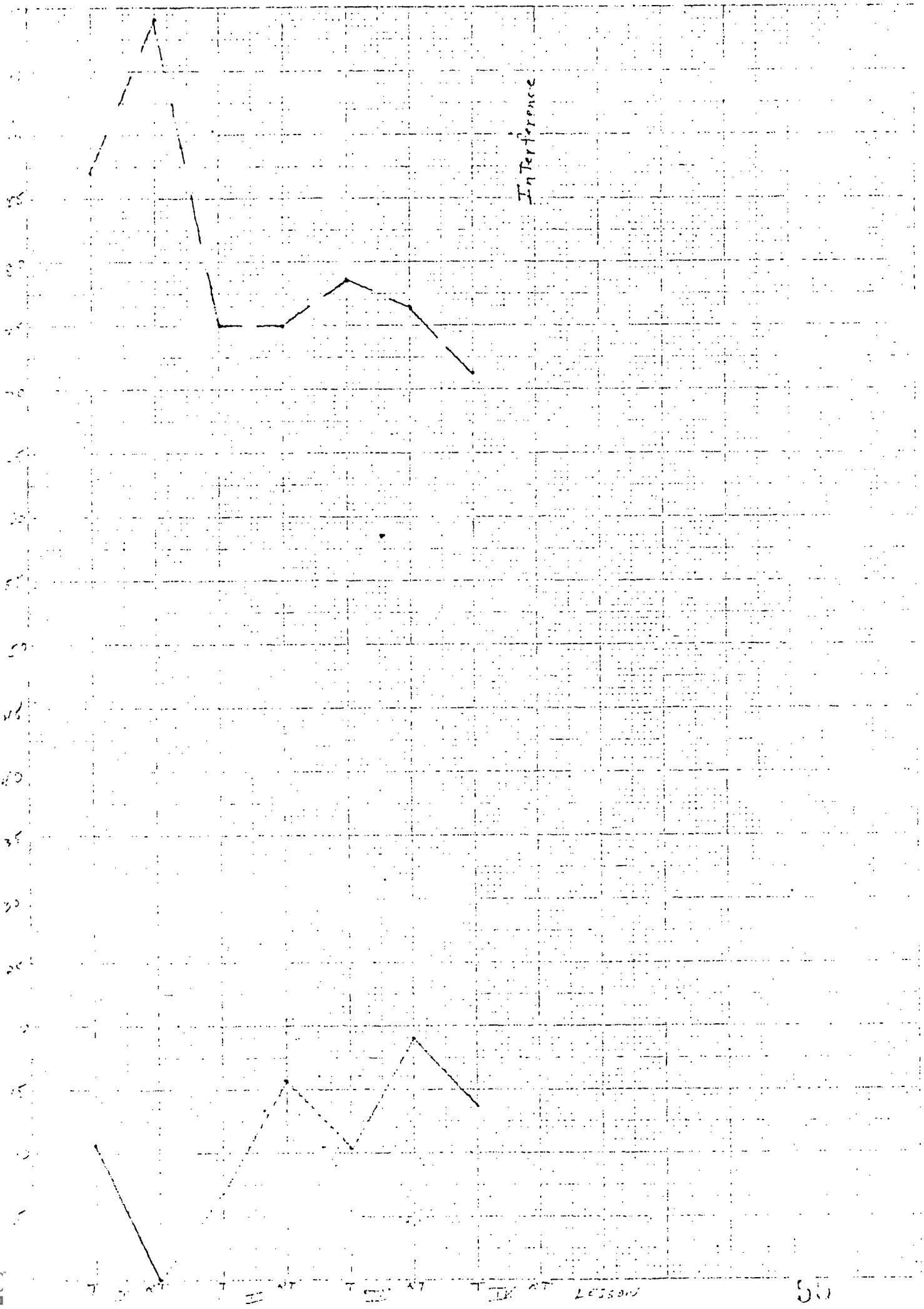

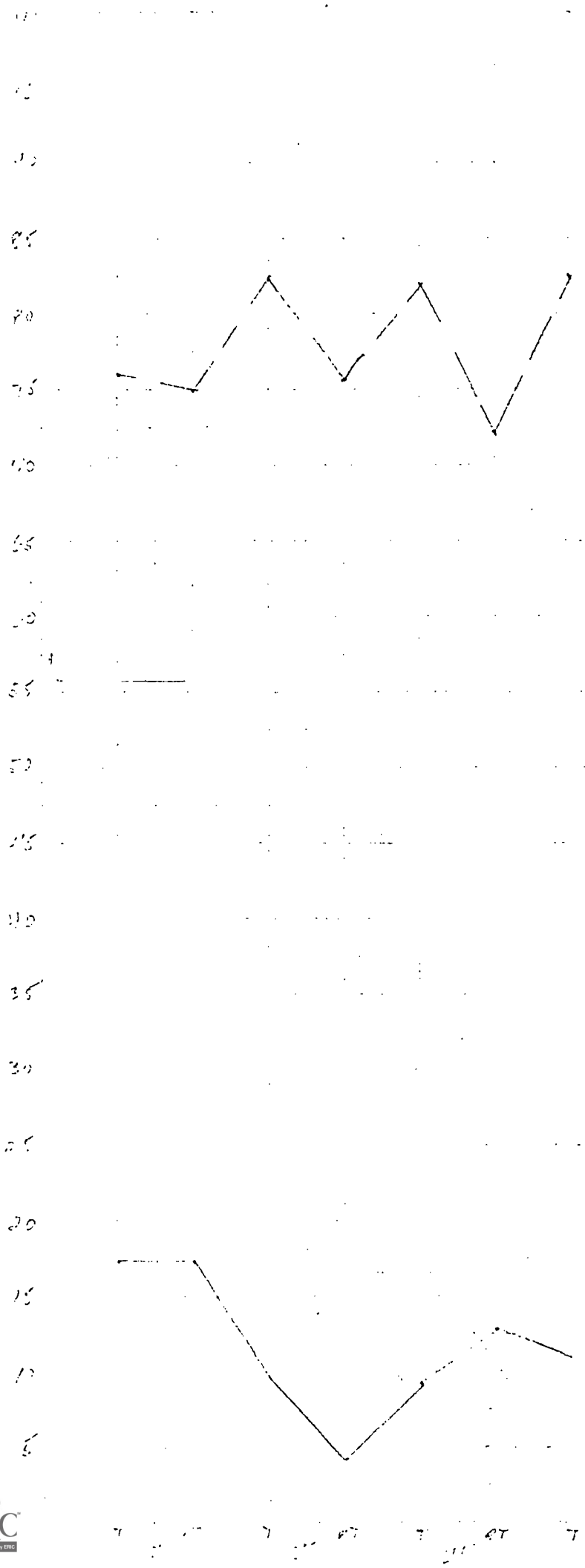
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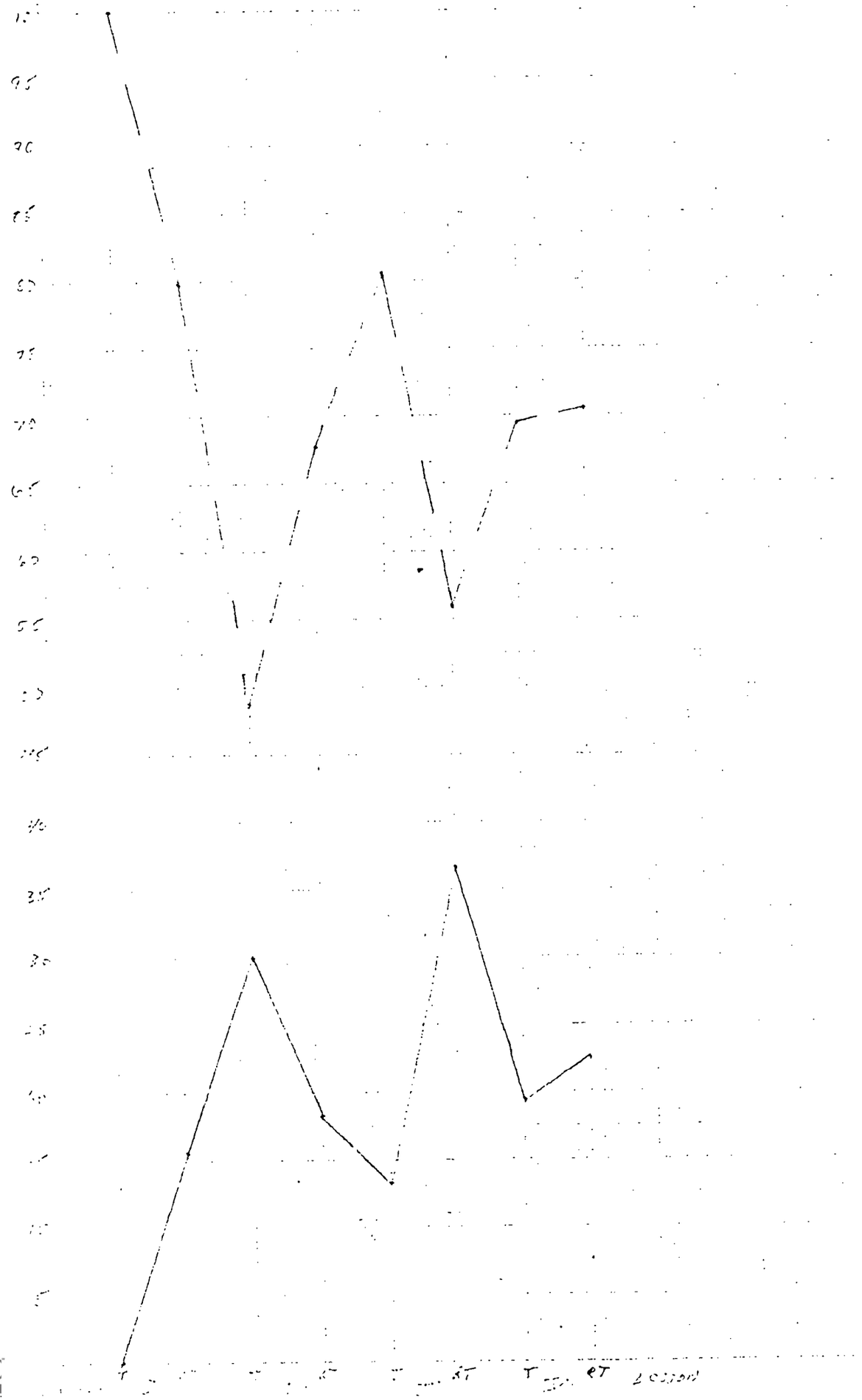

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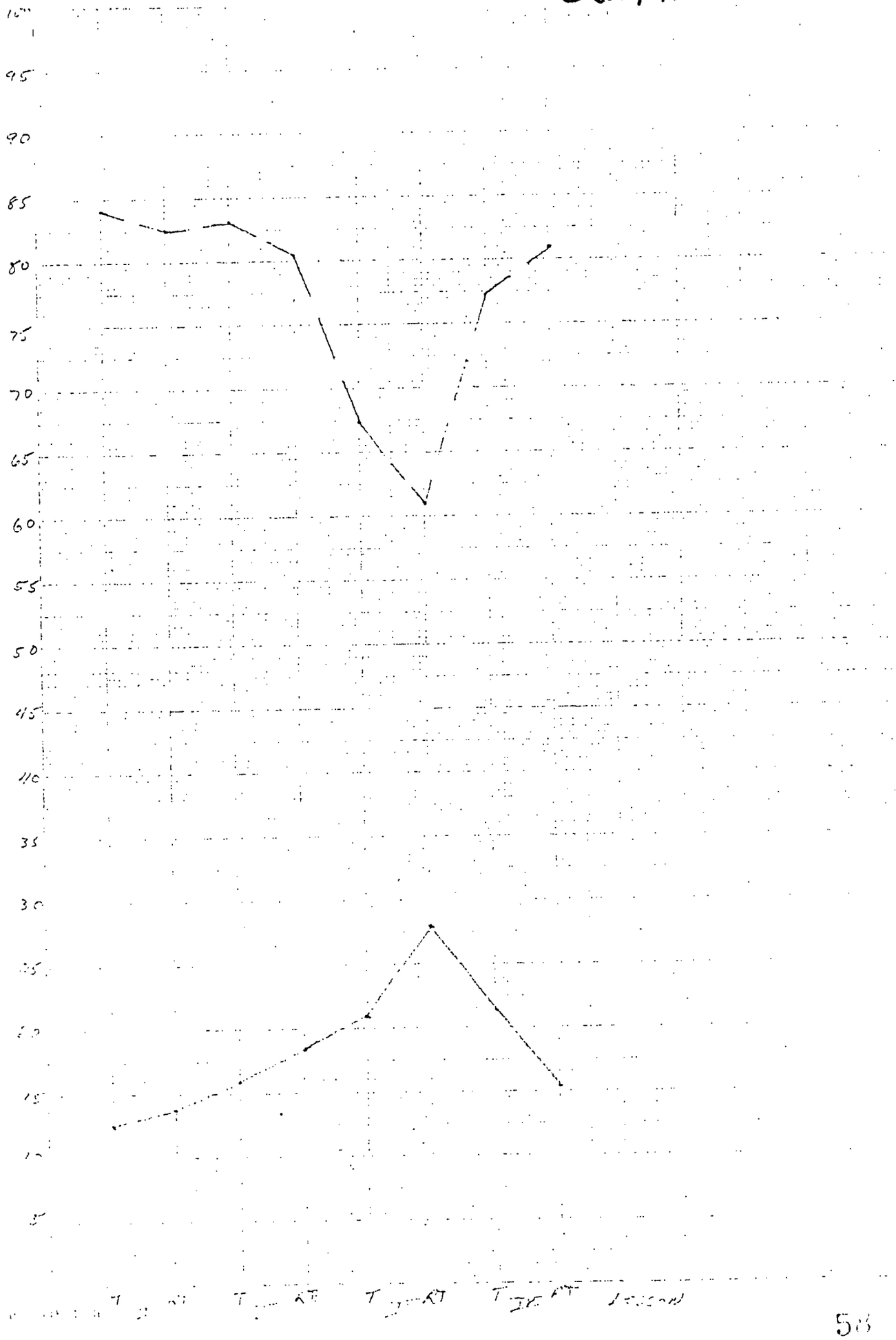

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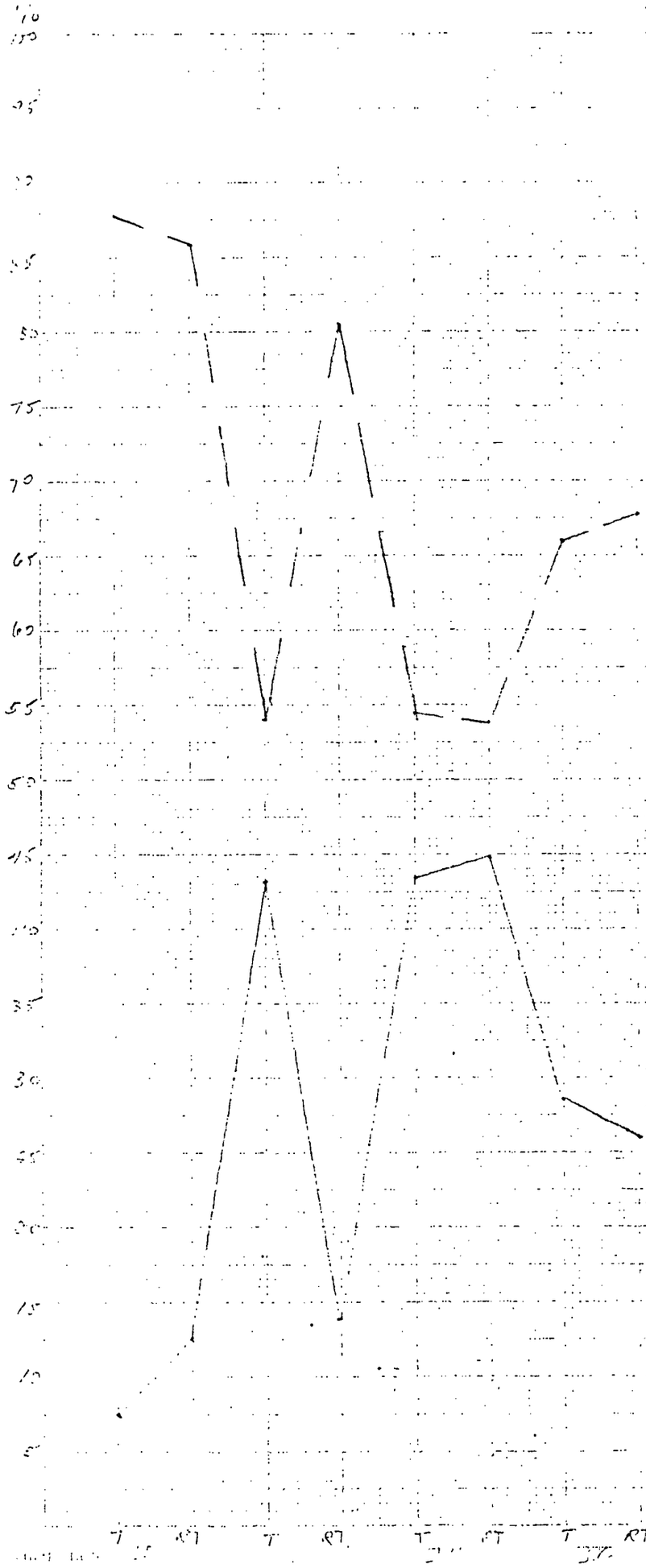

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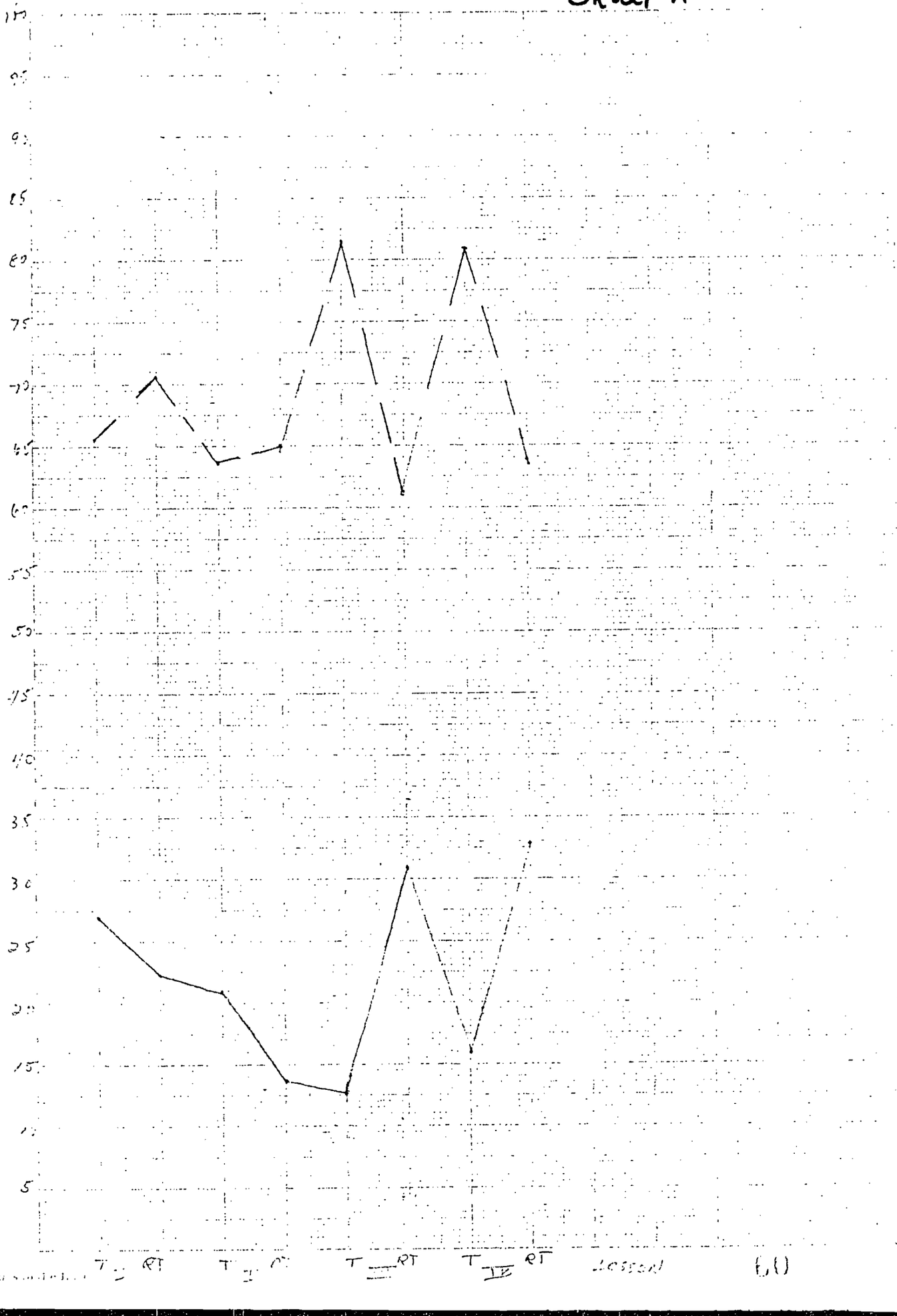
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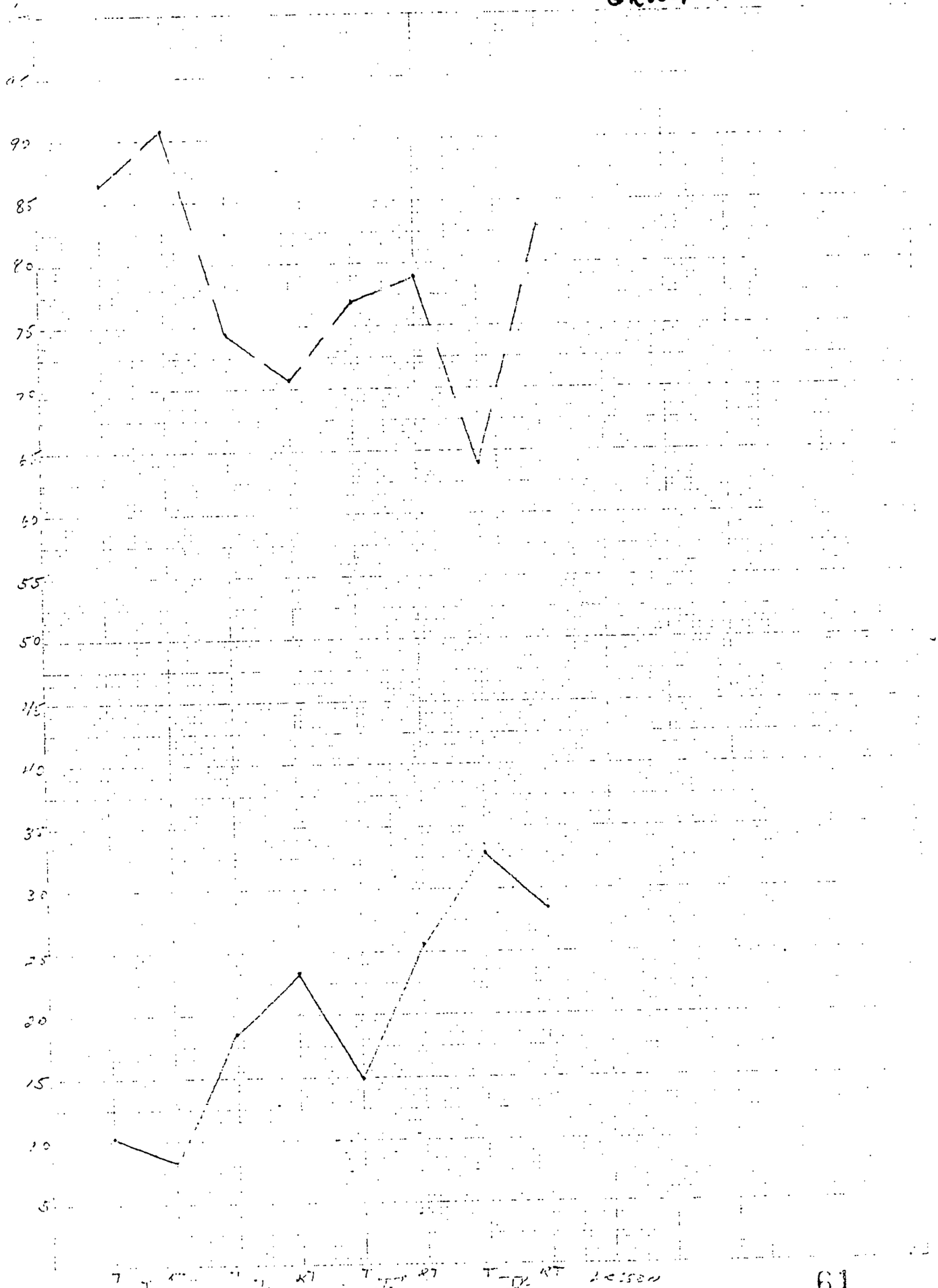

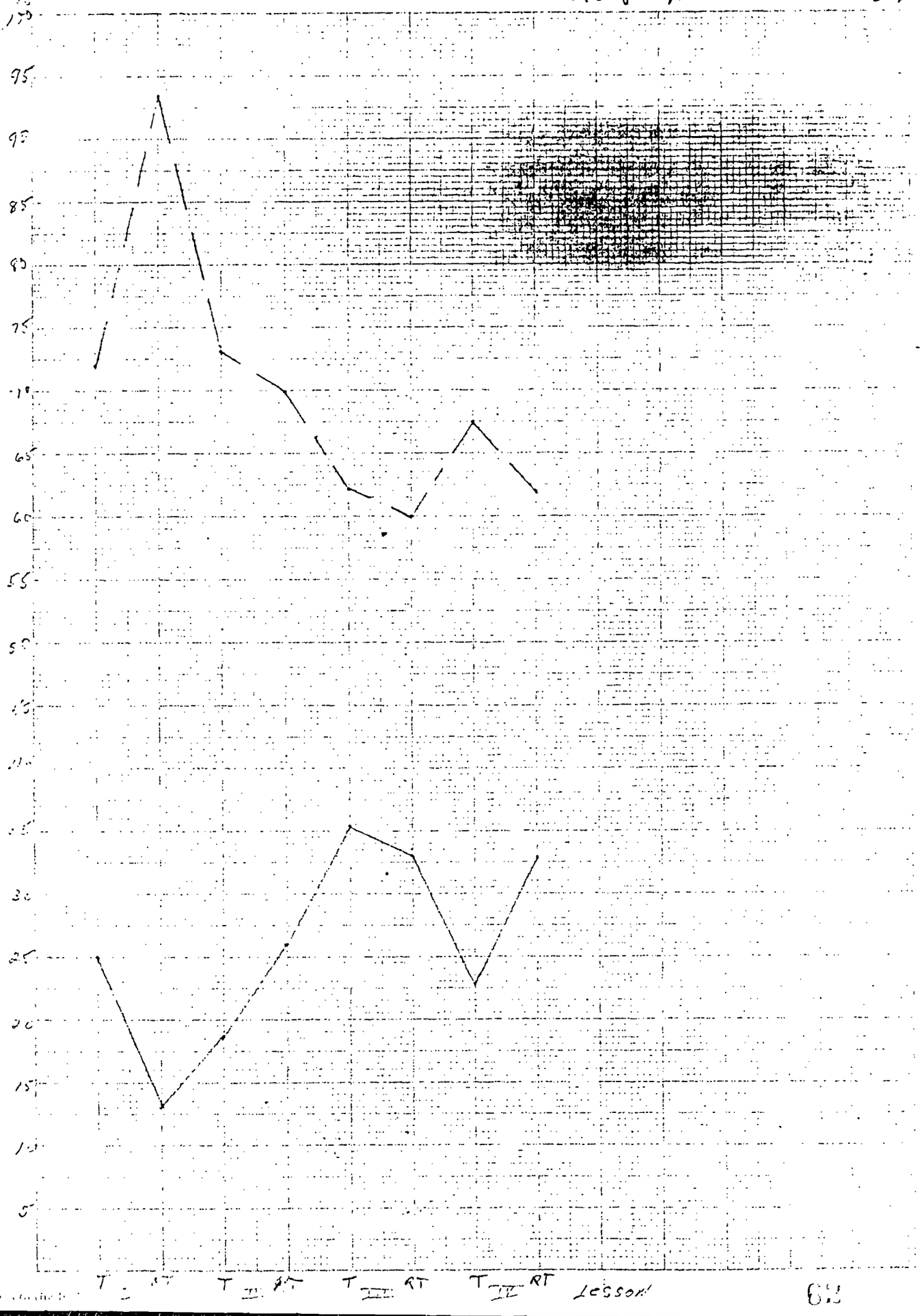
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LESSON

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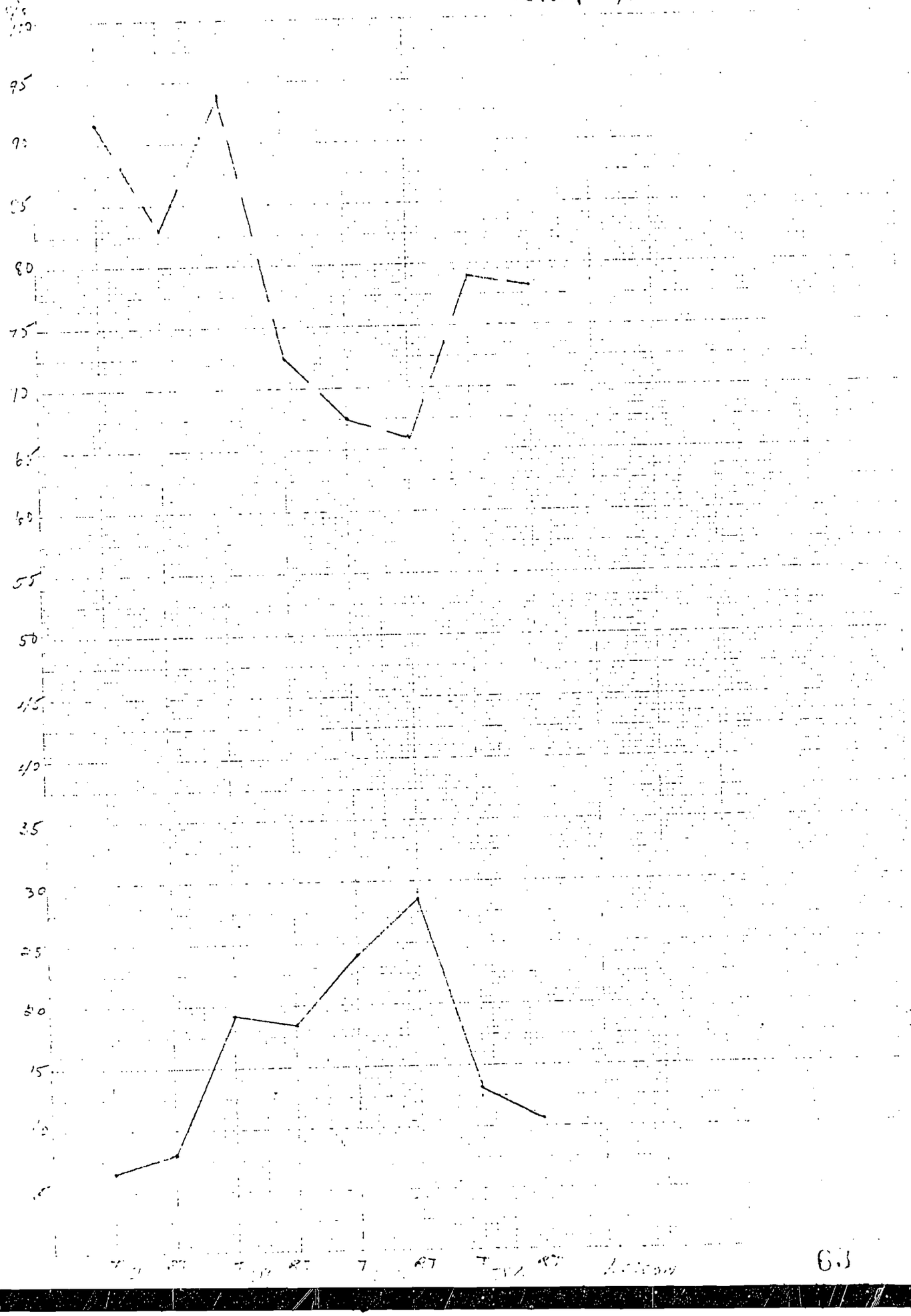

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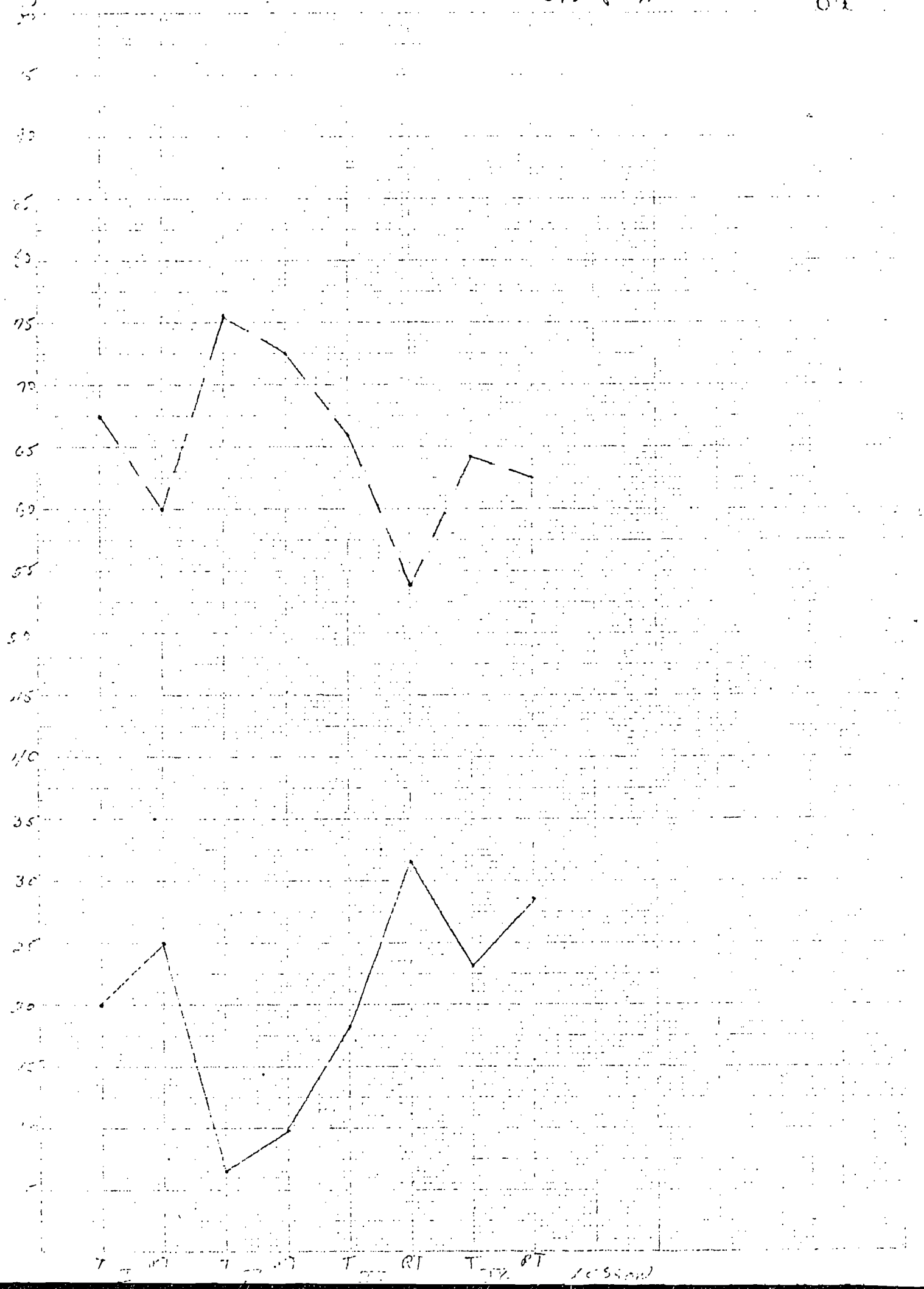

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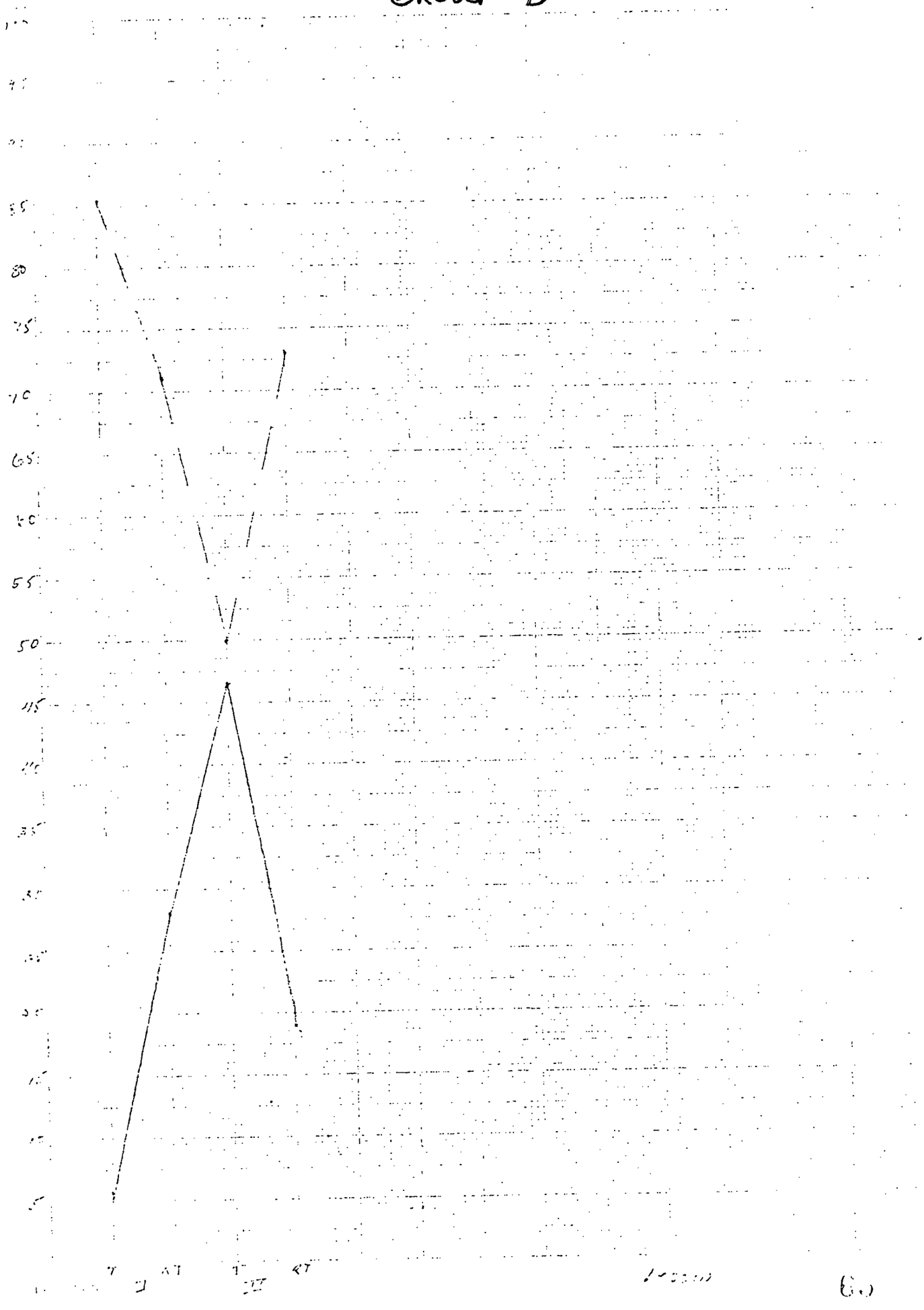

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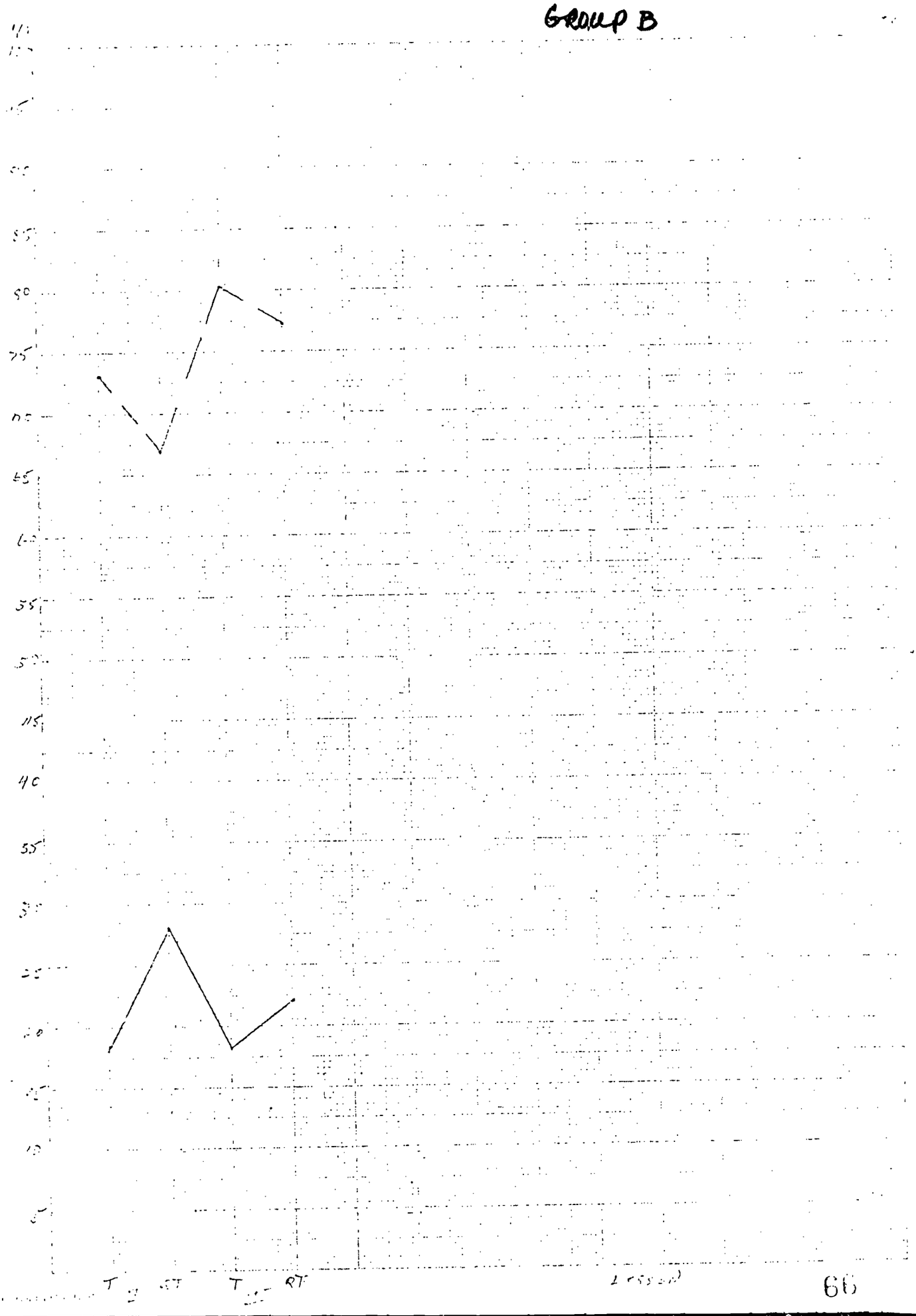

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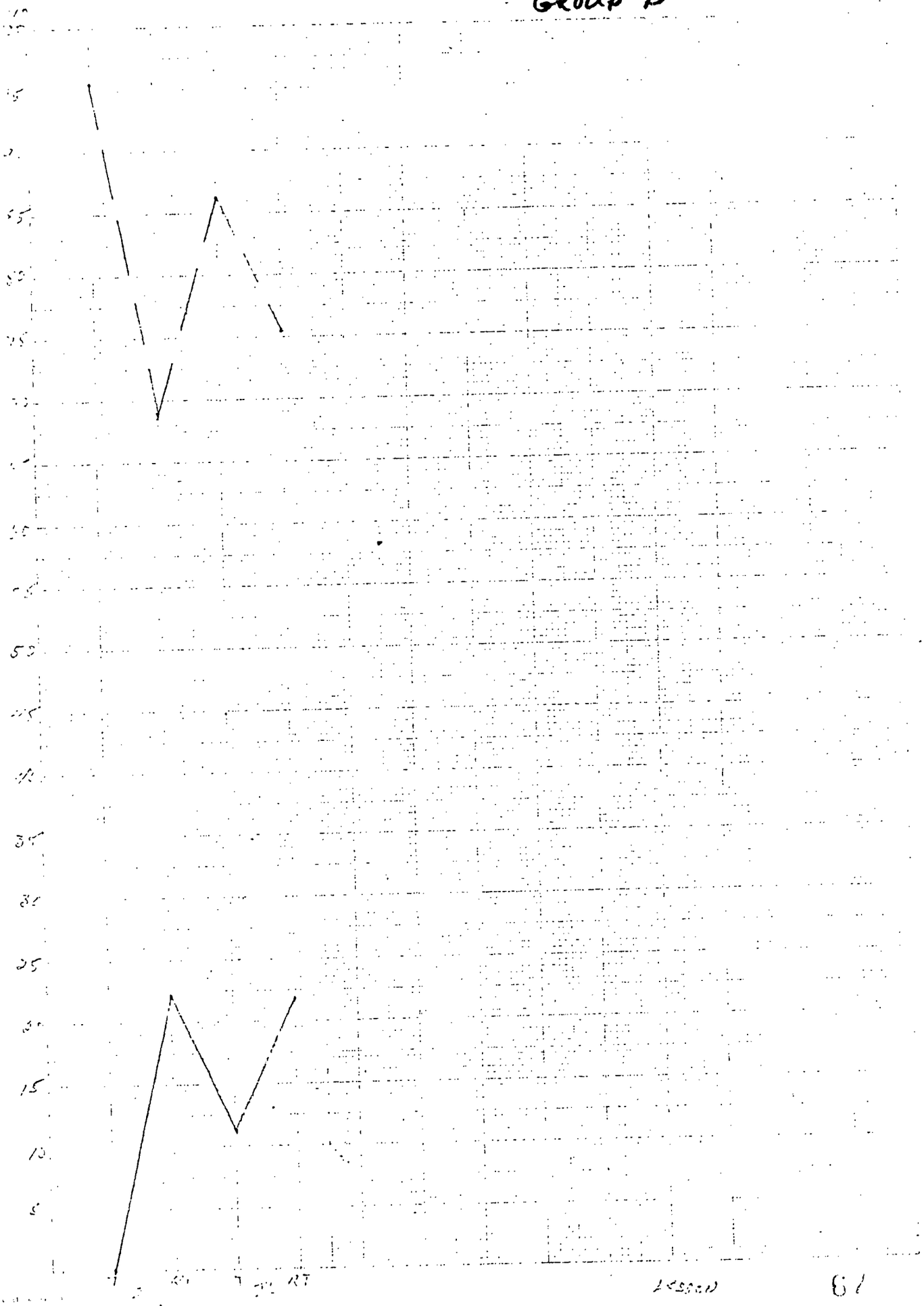

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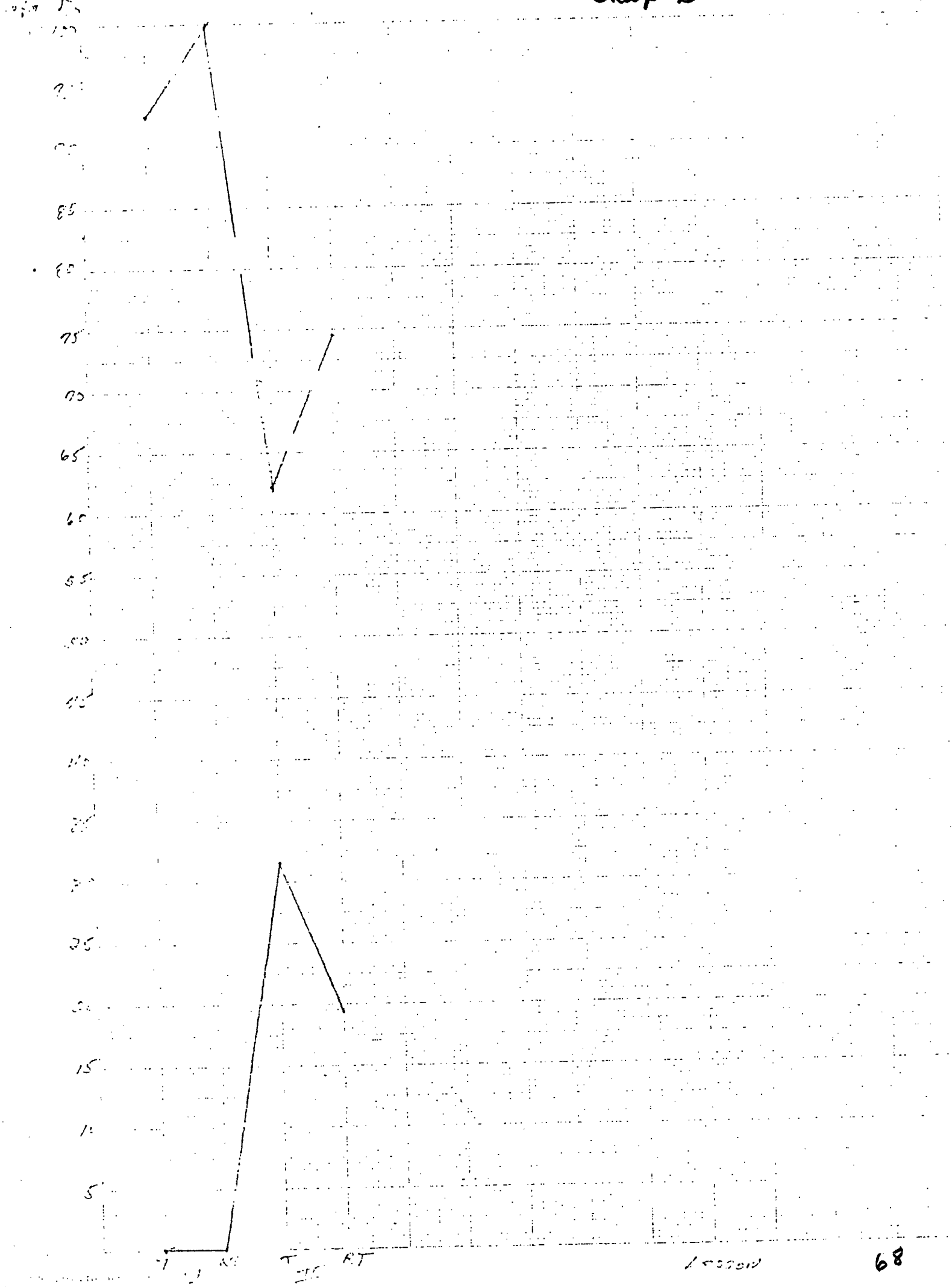

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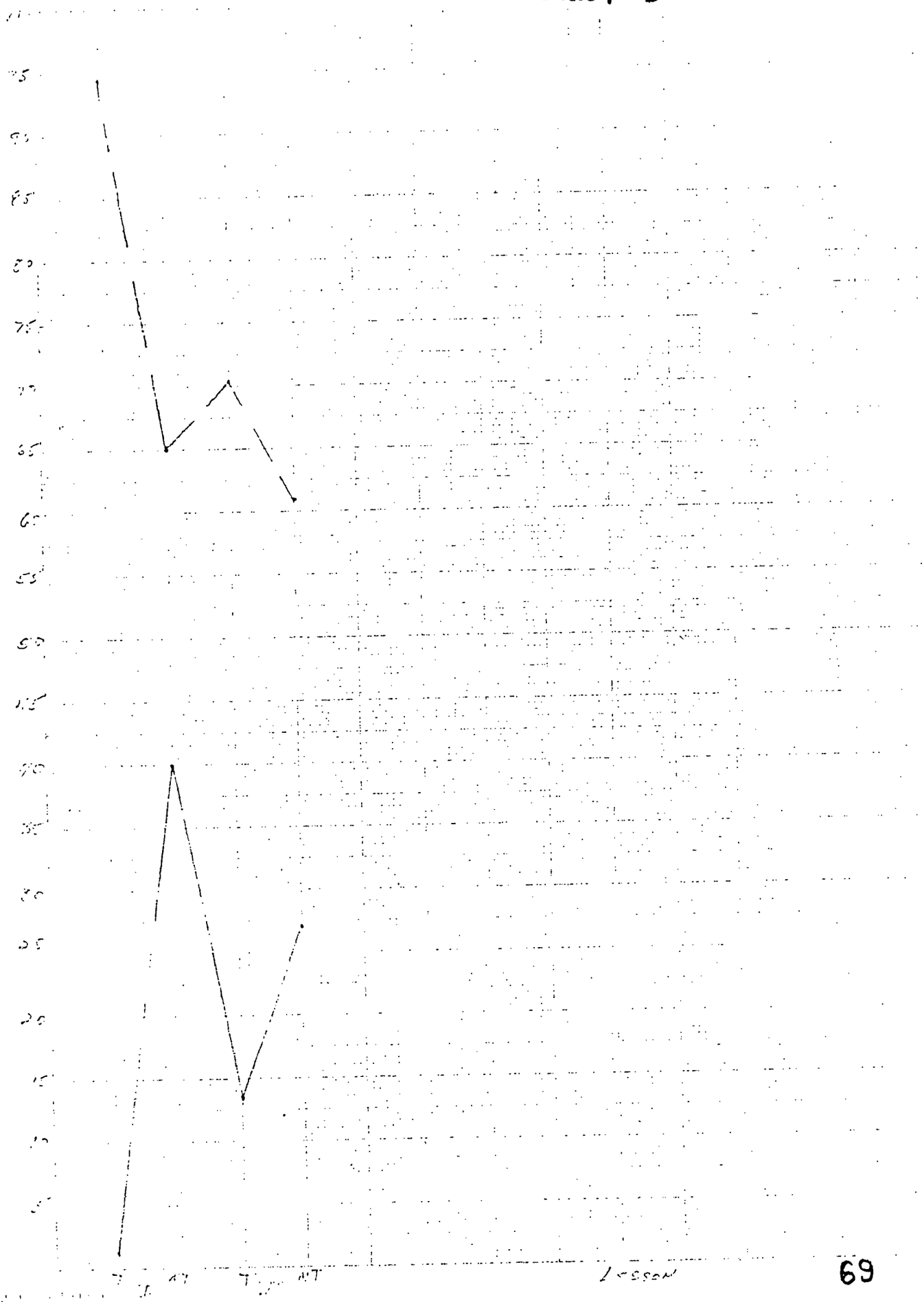

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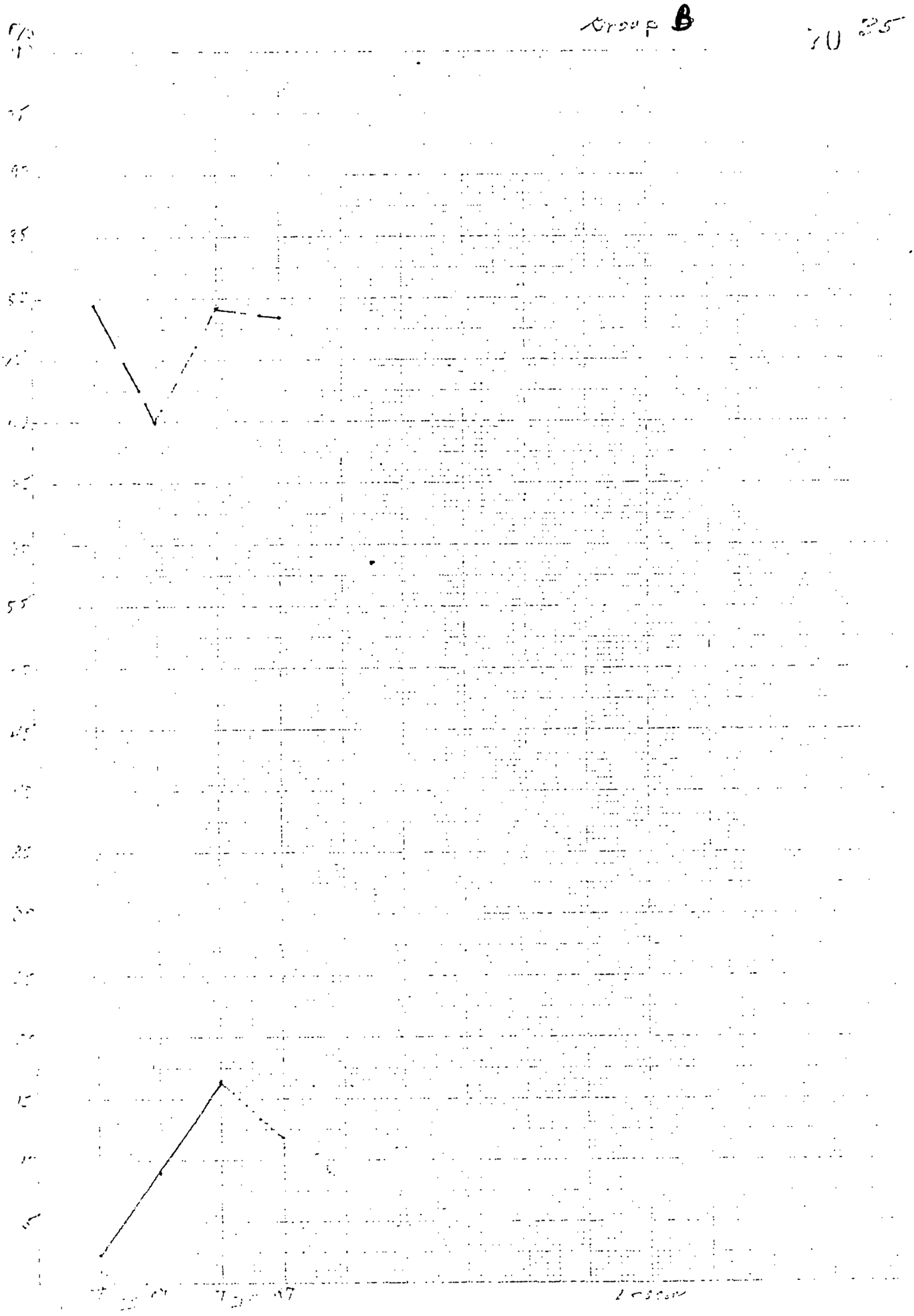

Group B

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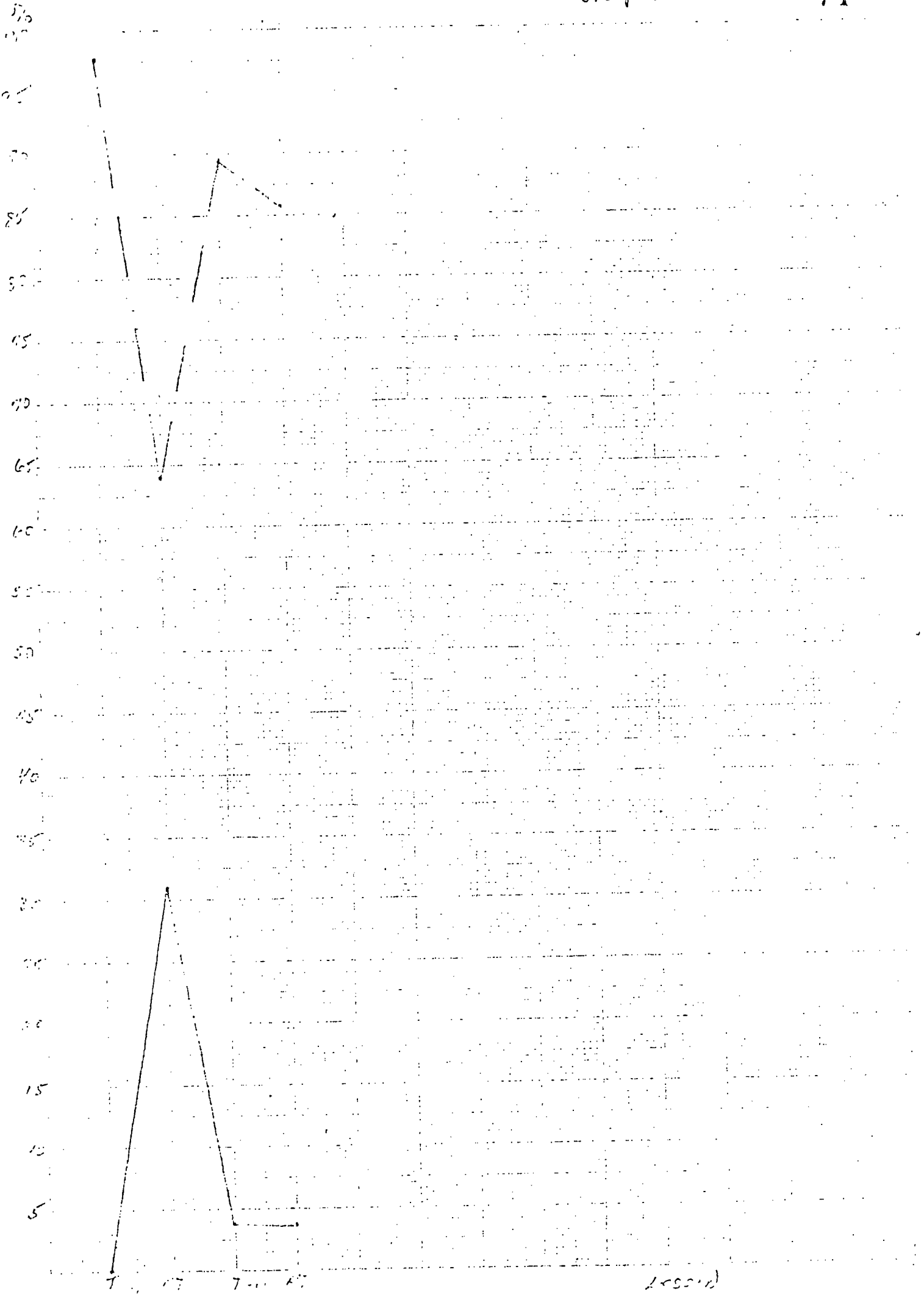

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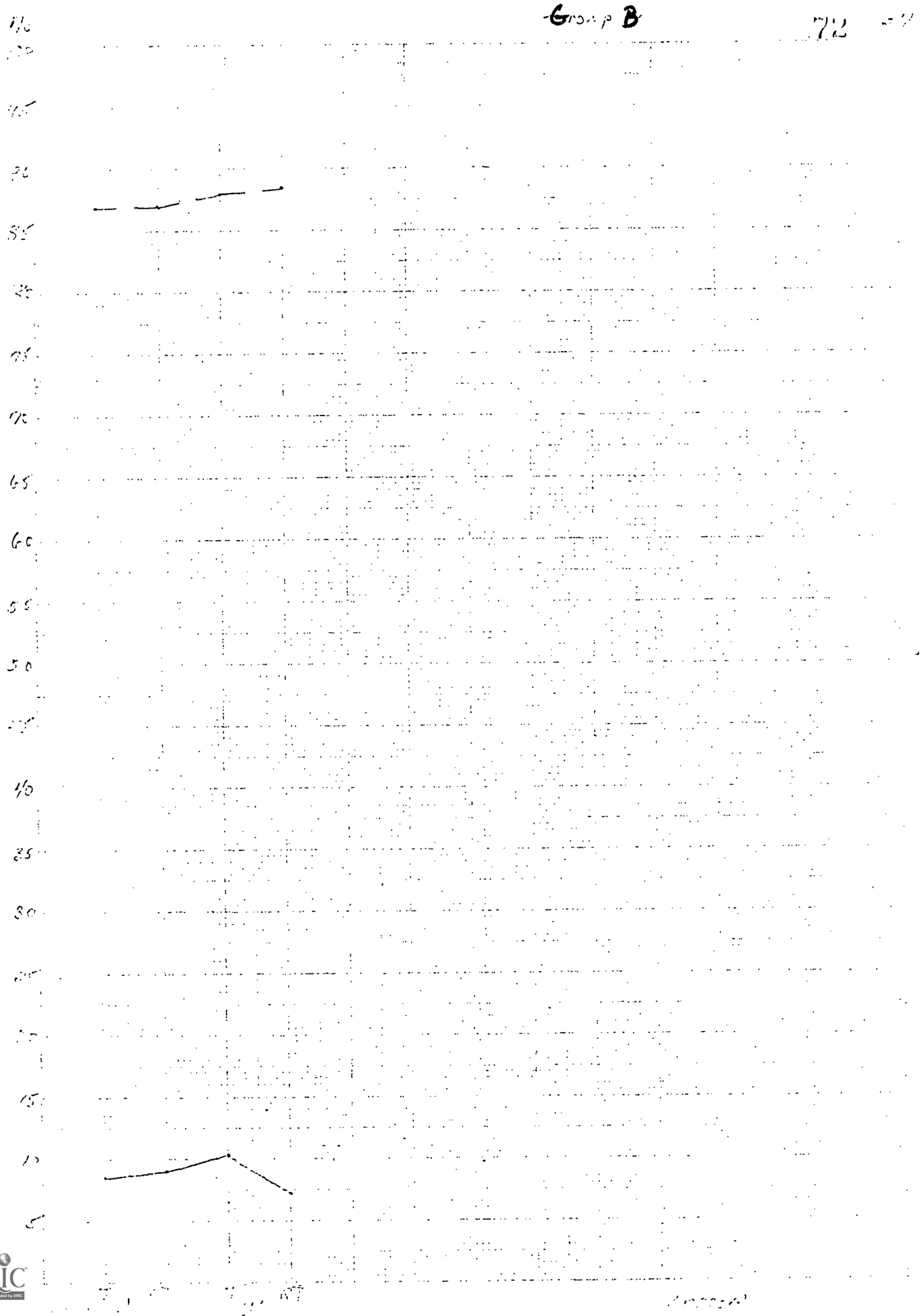

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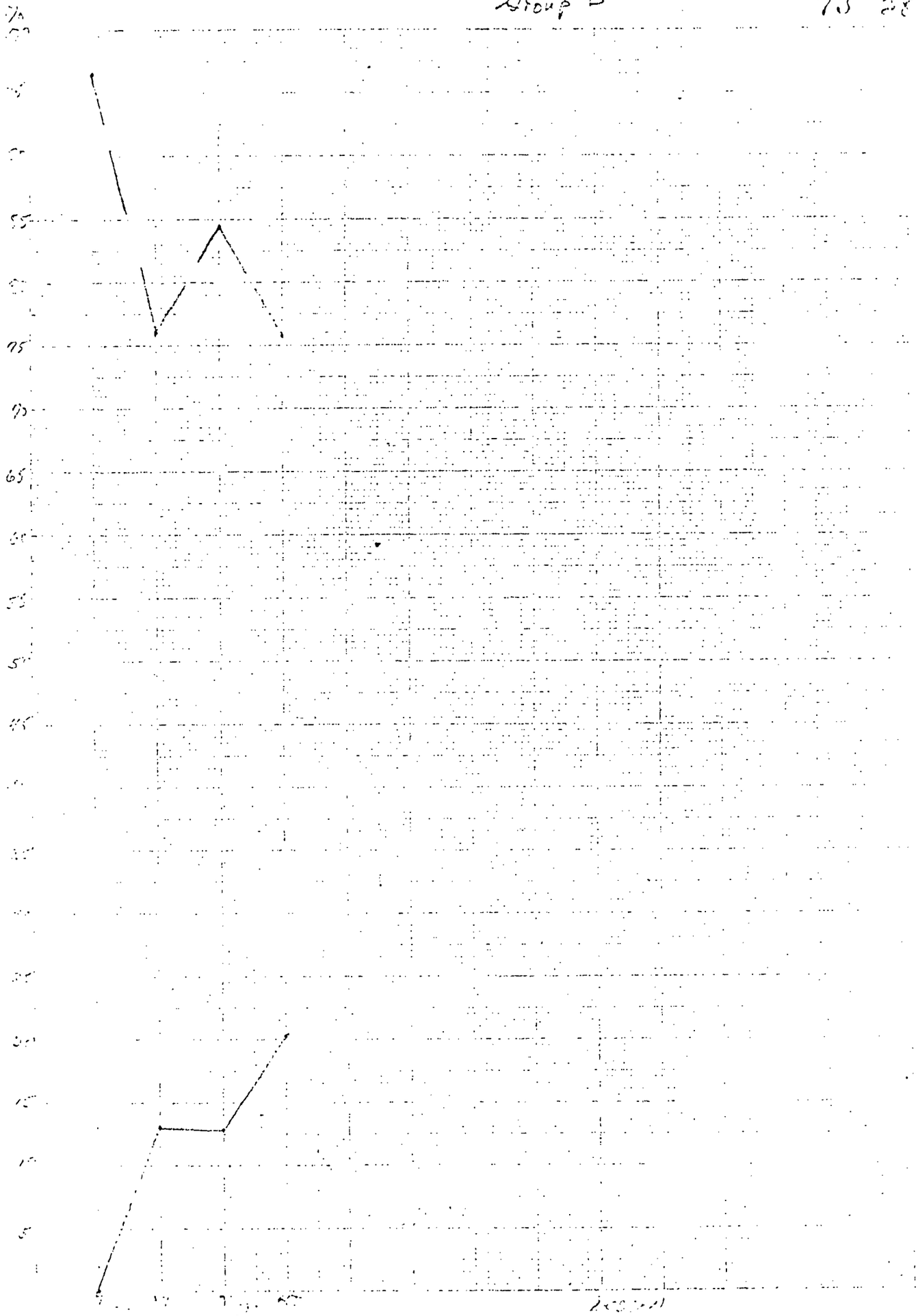

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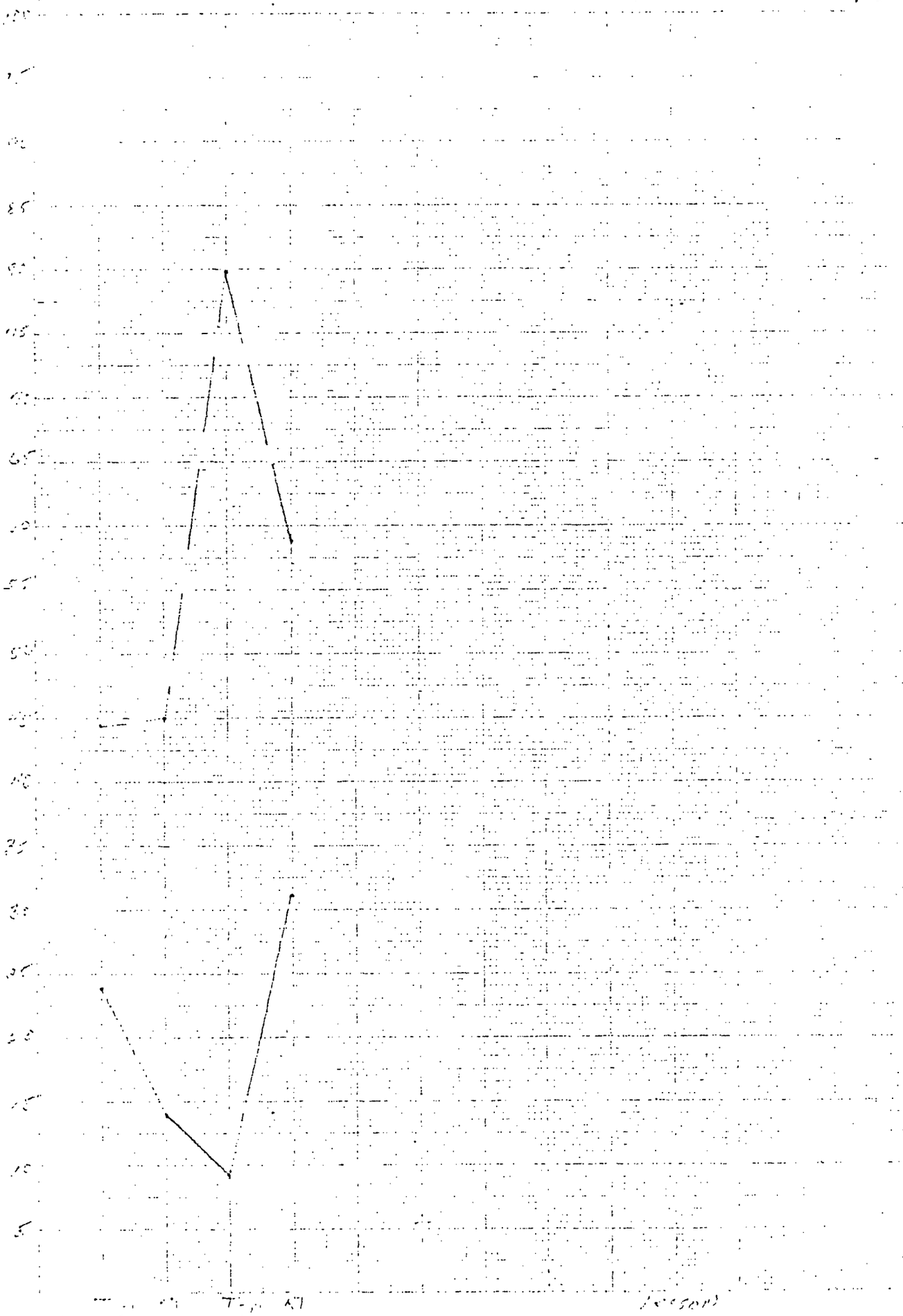

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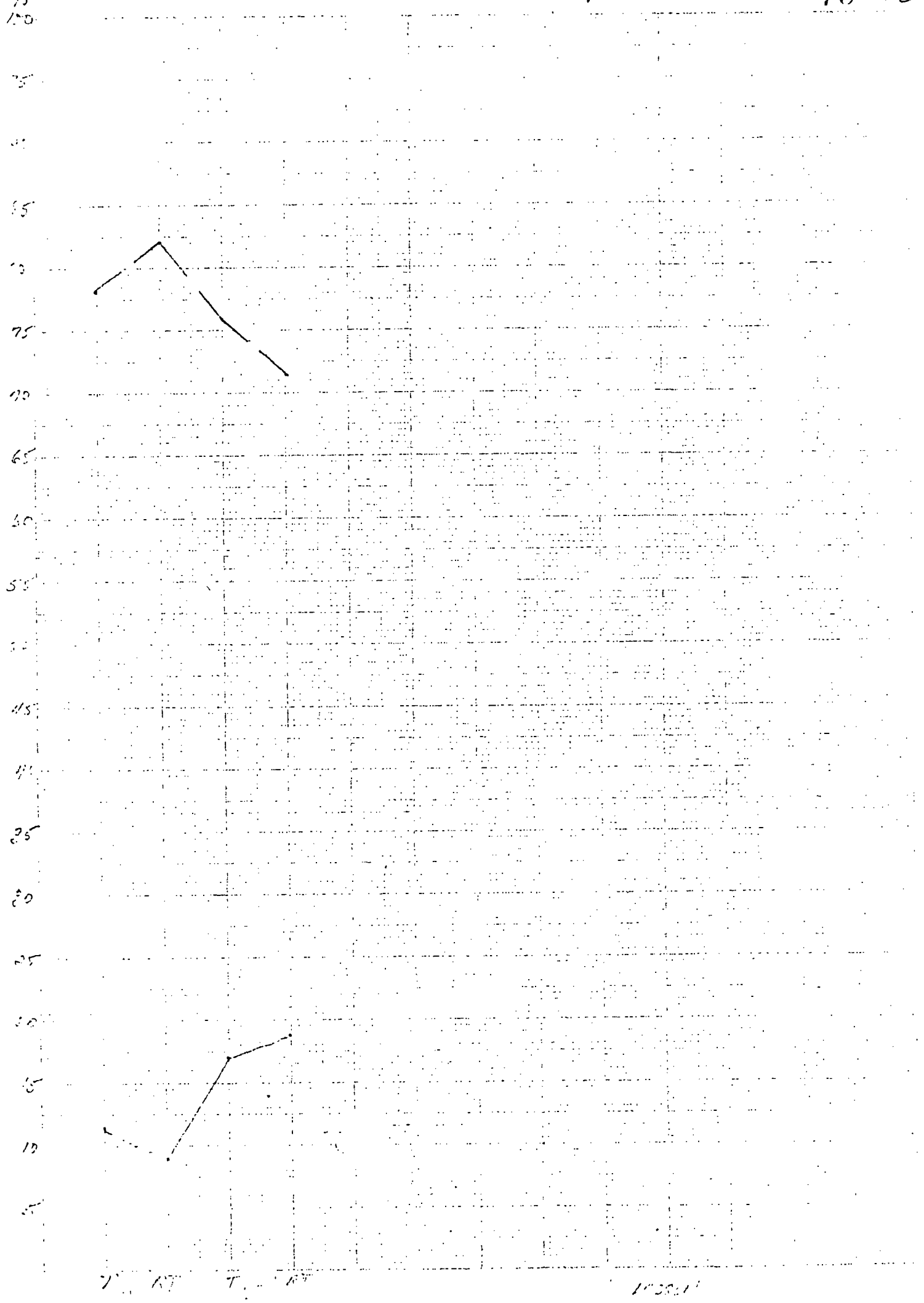

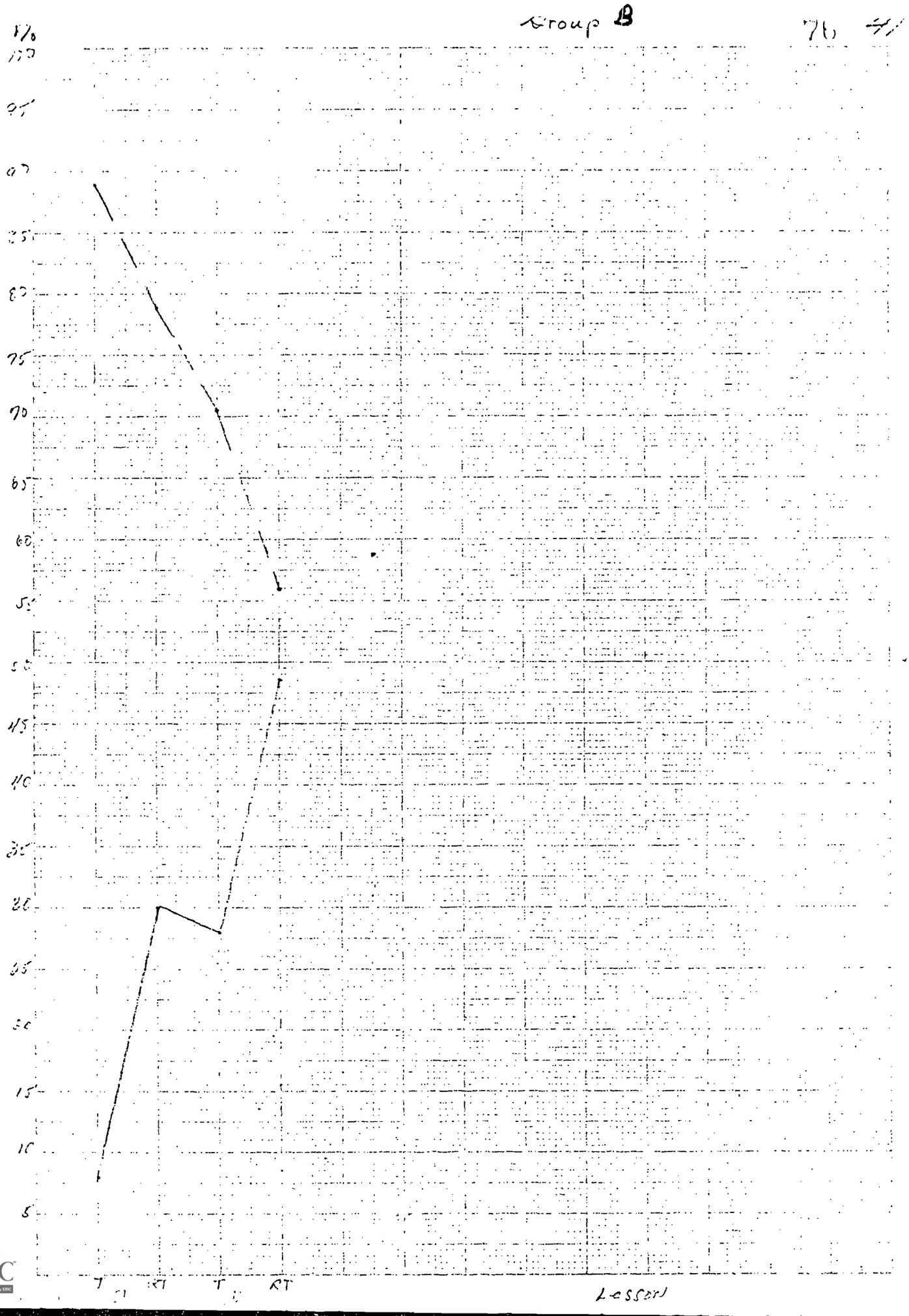
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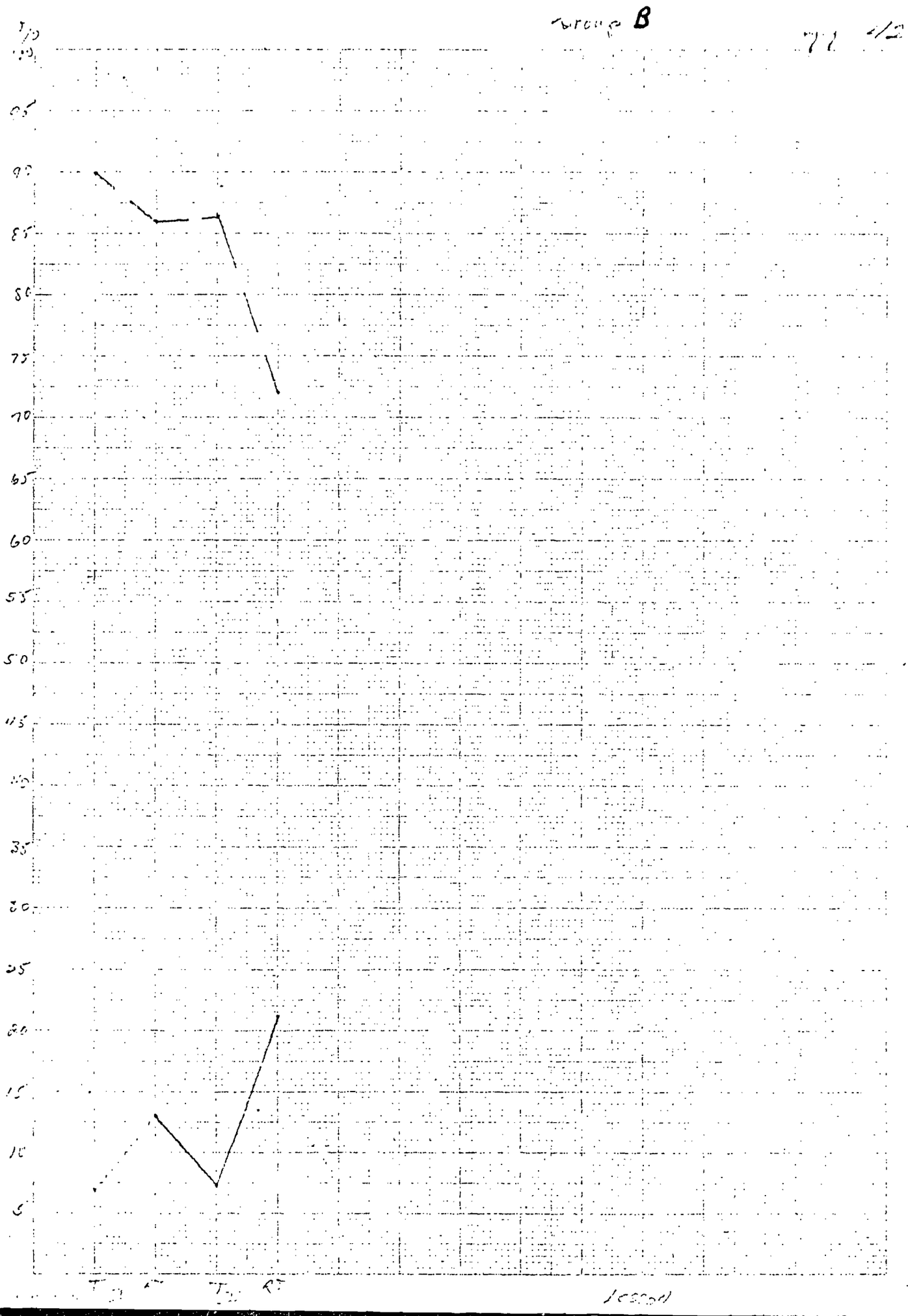
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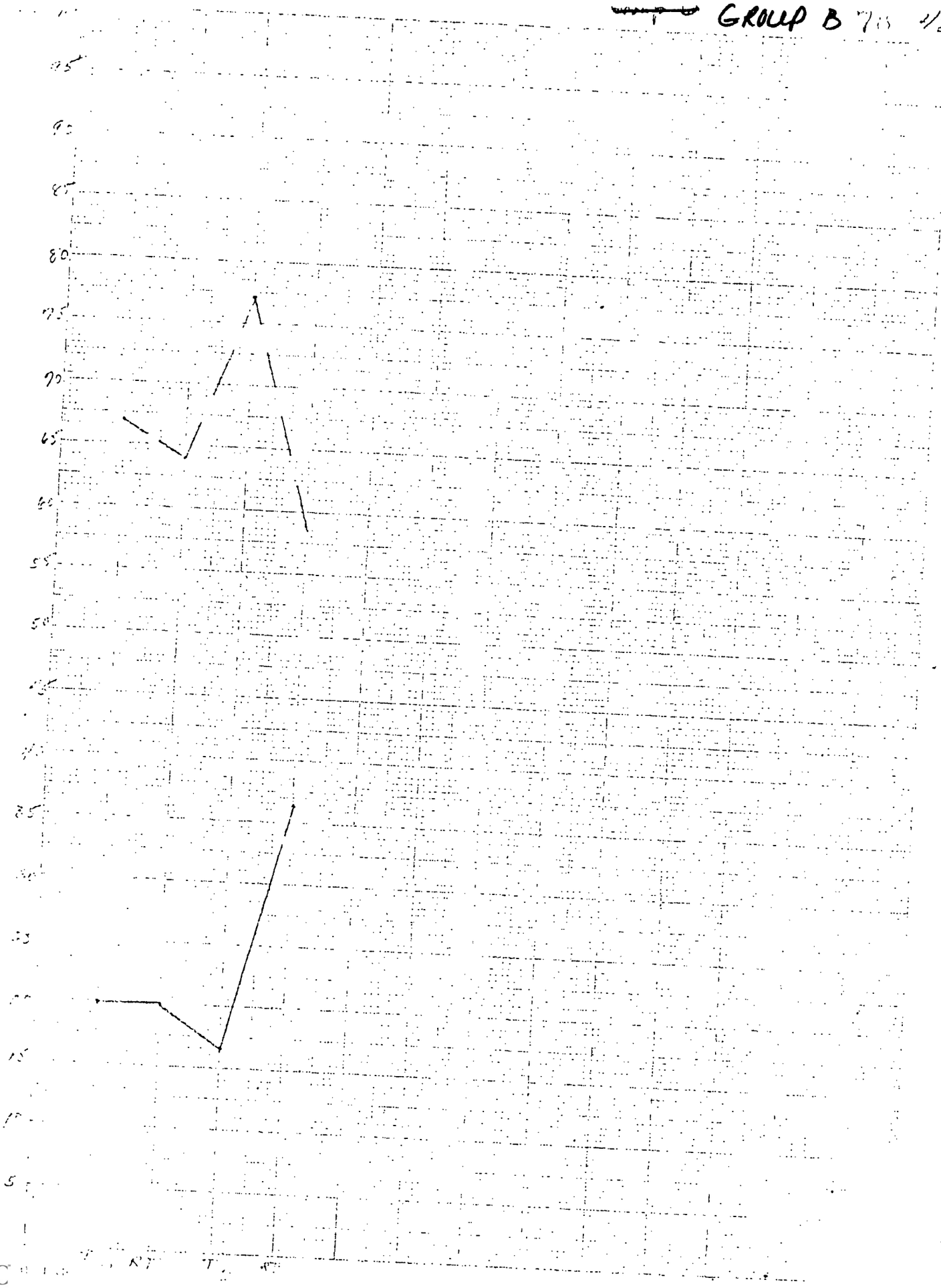

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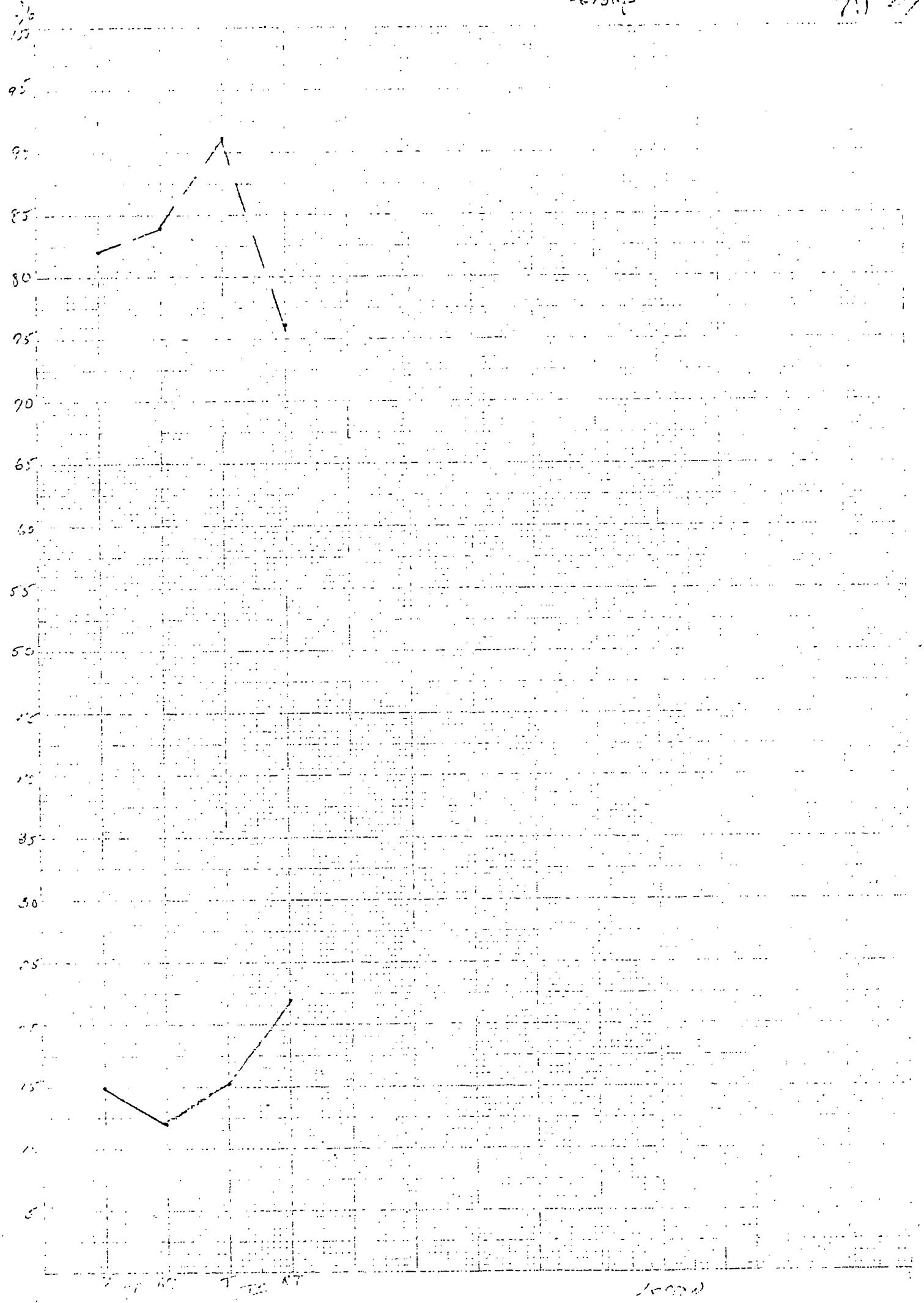

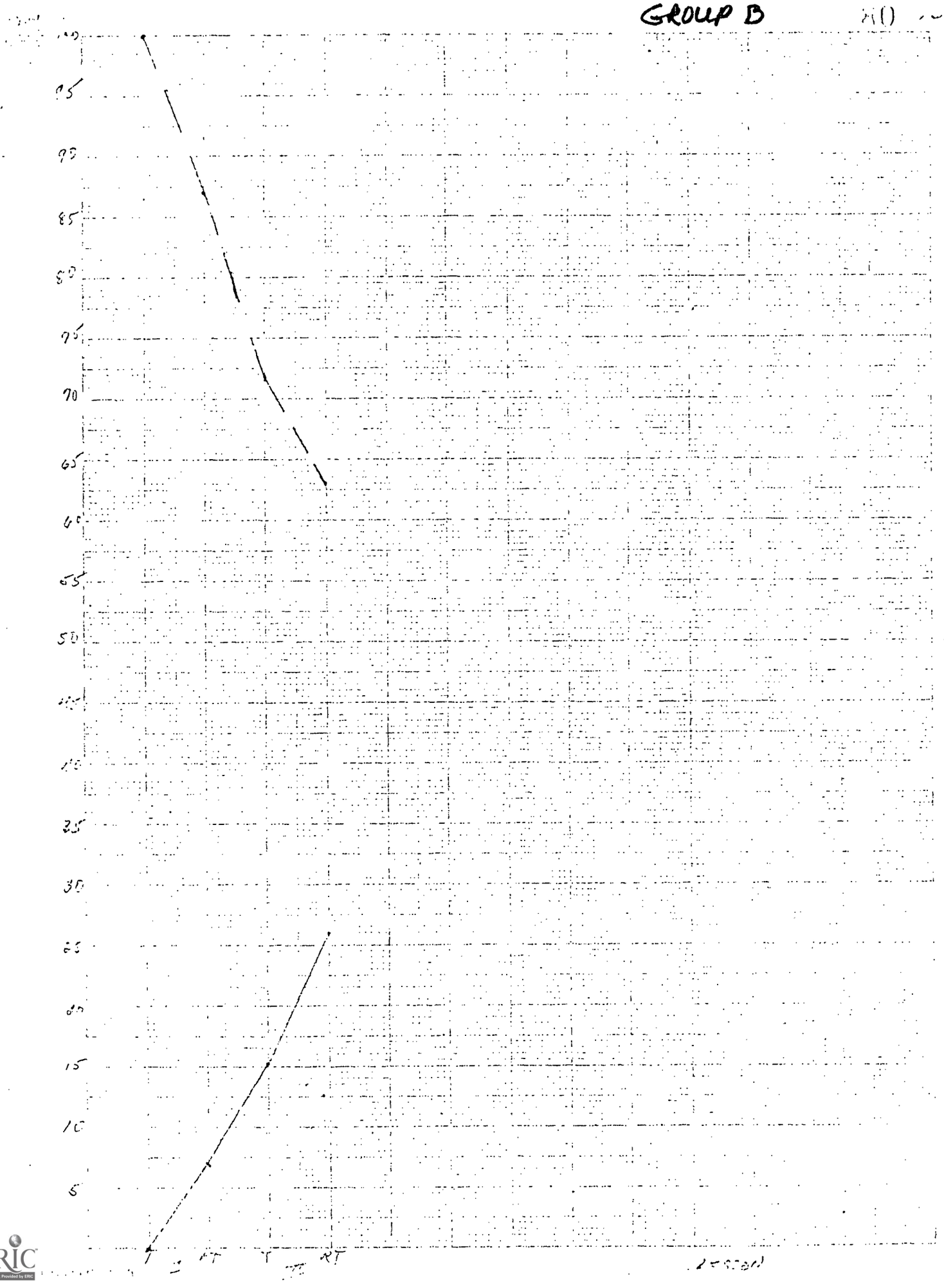
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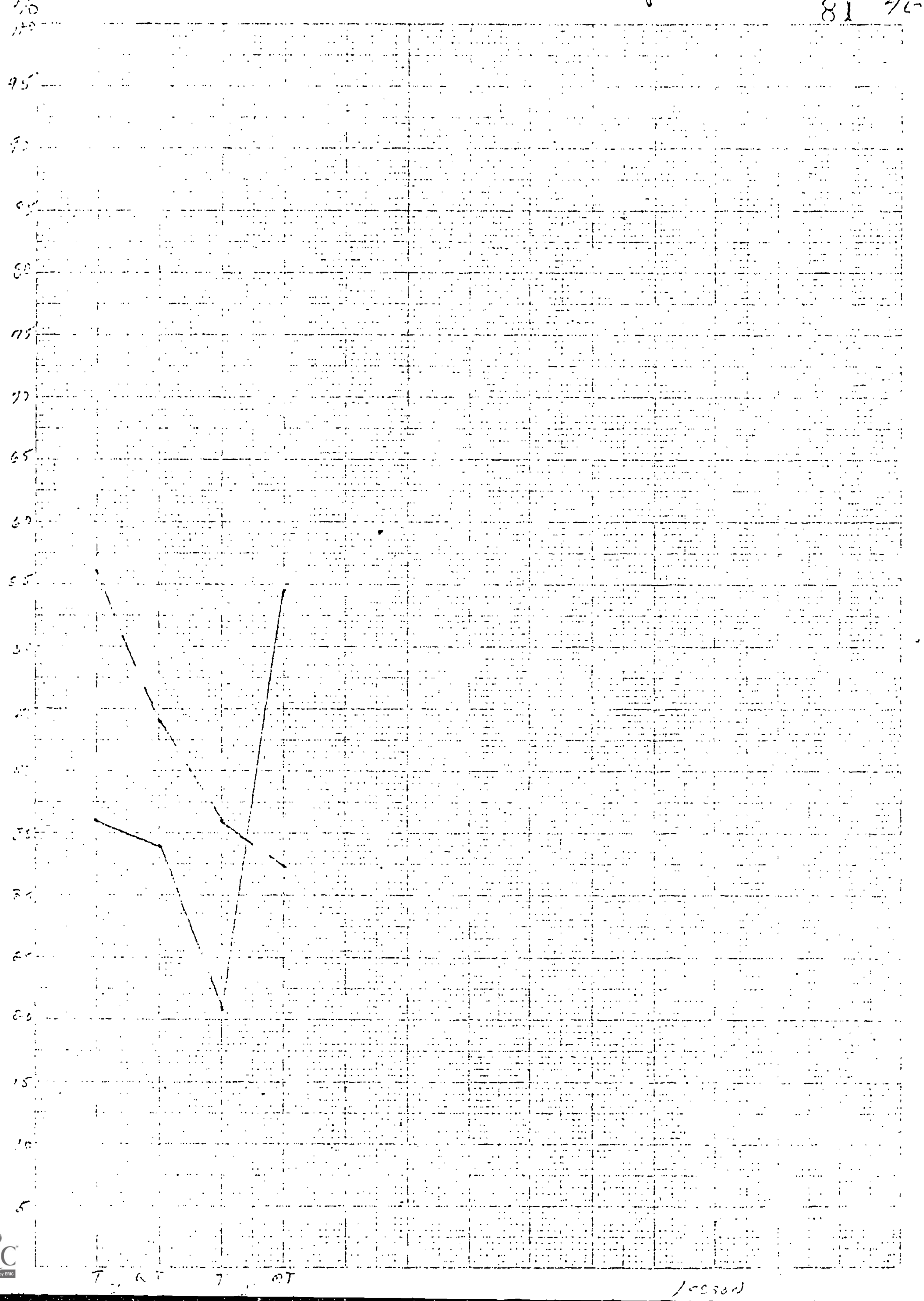

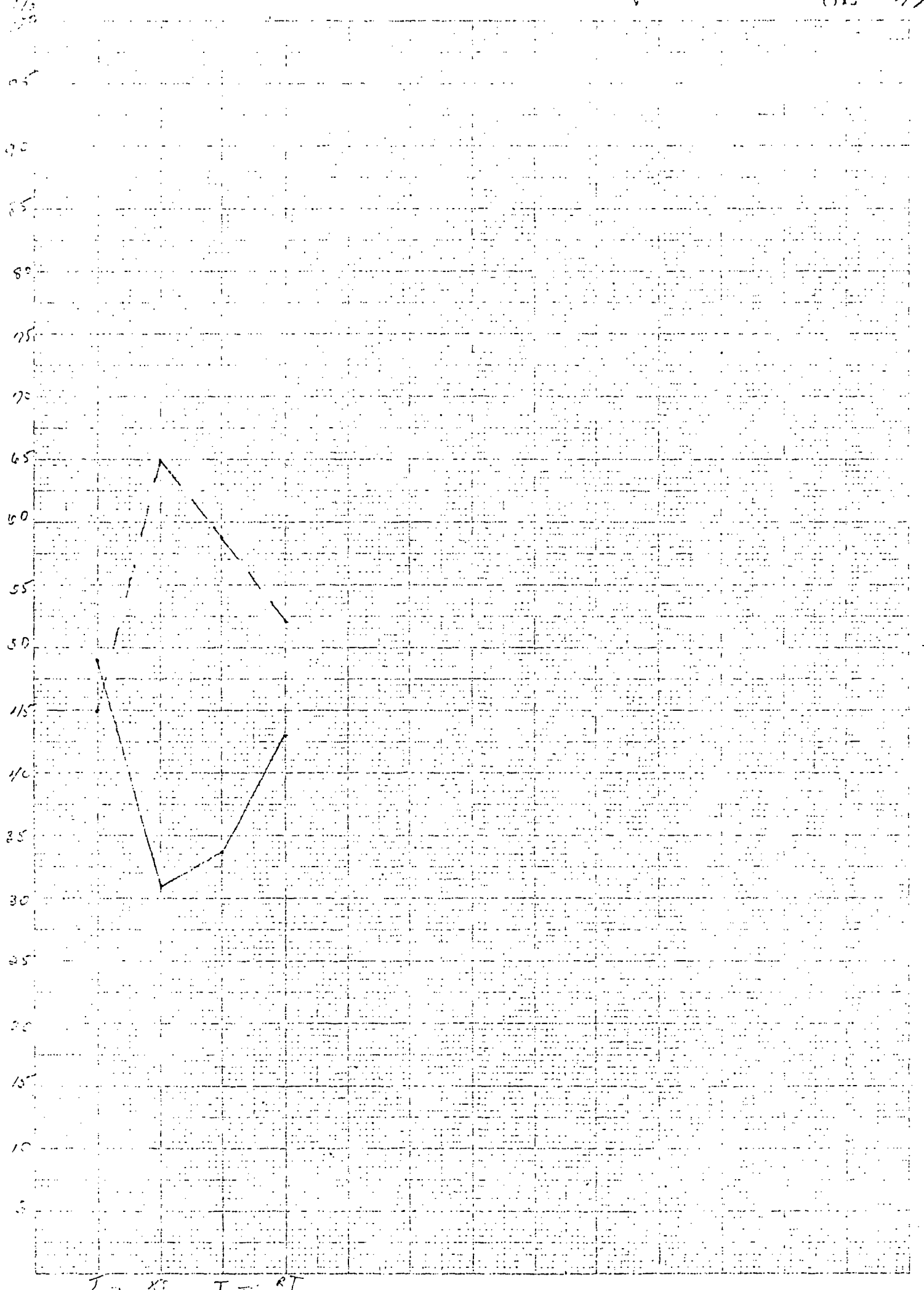

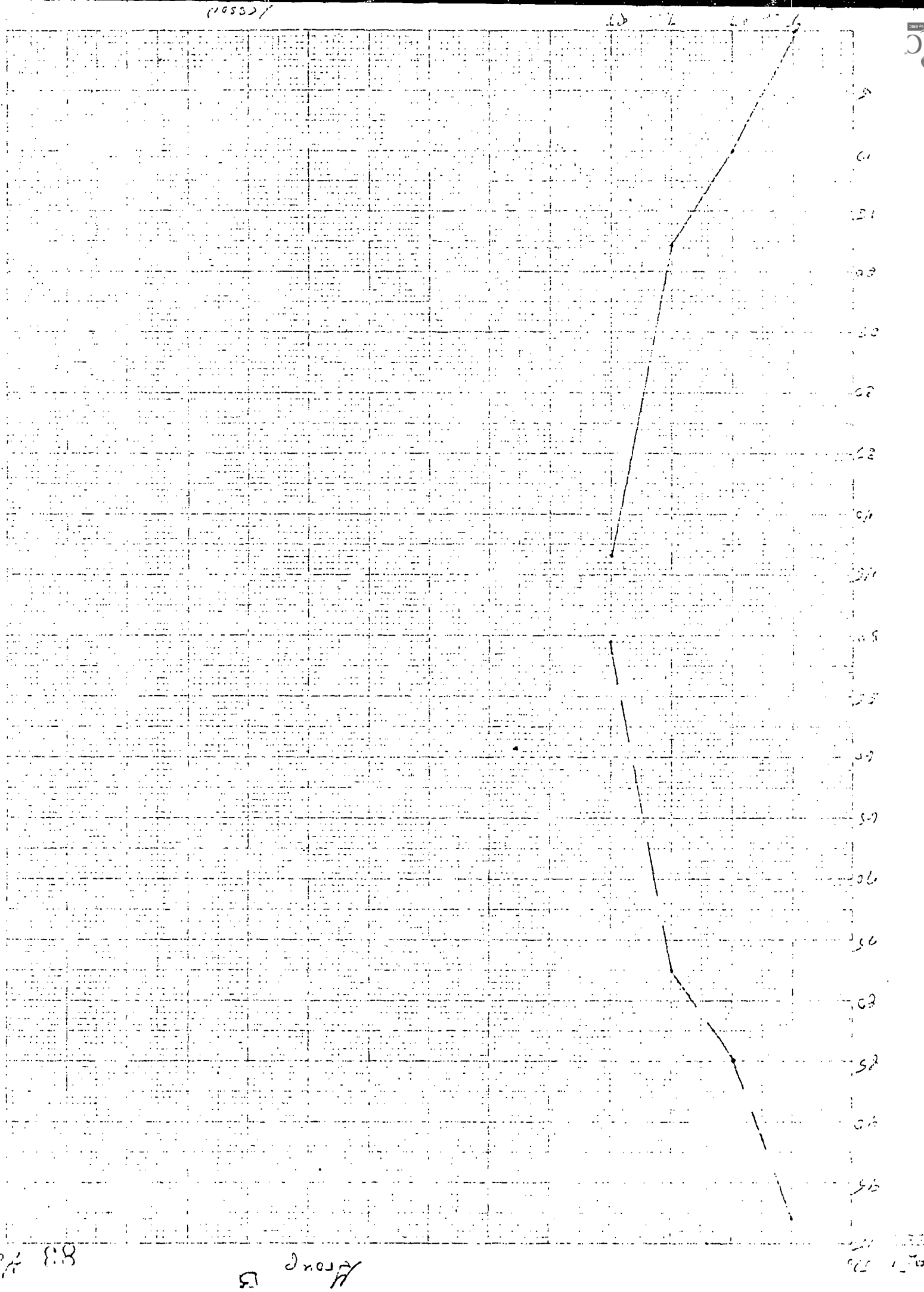

Group D

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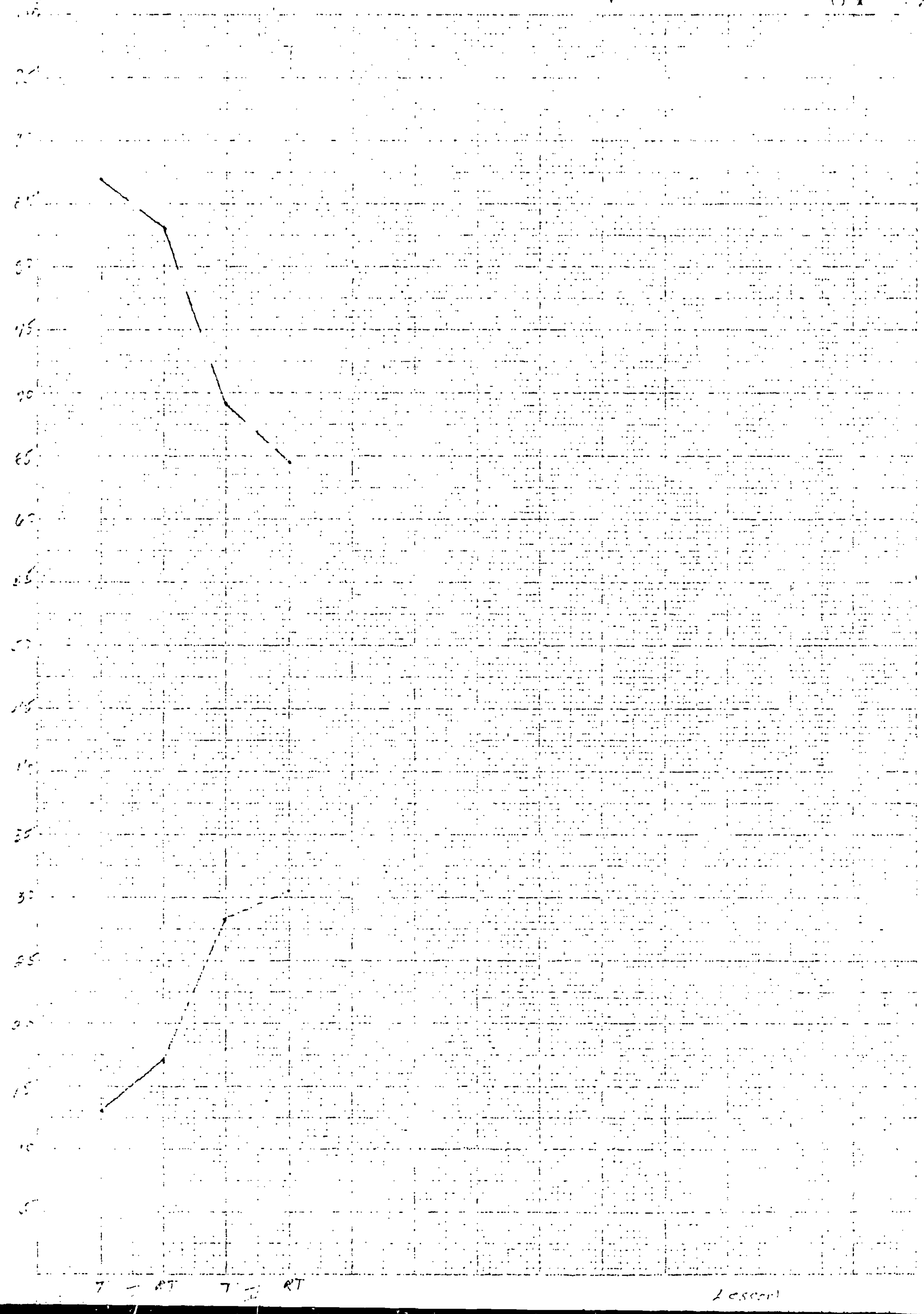

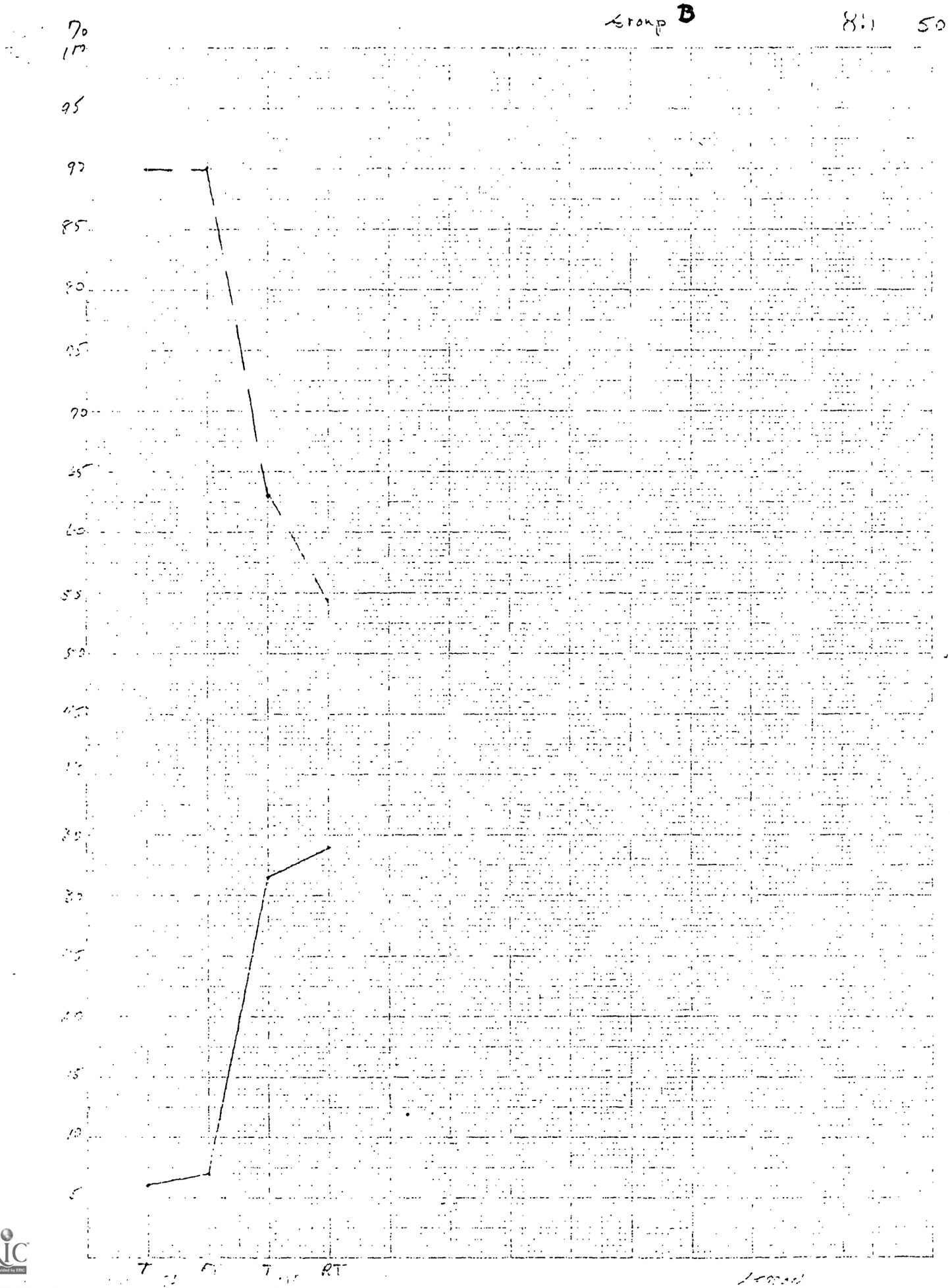
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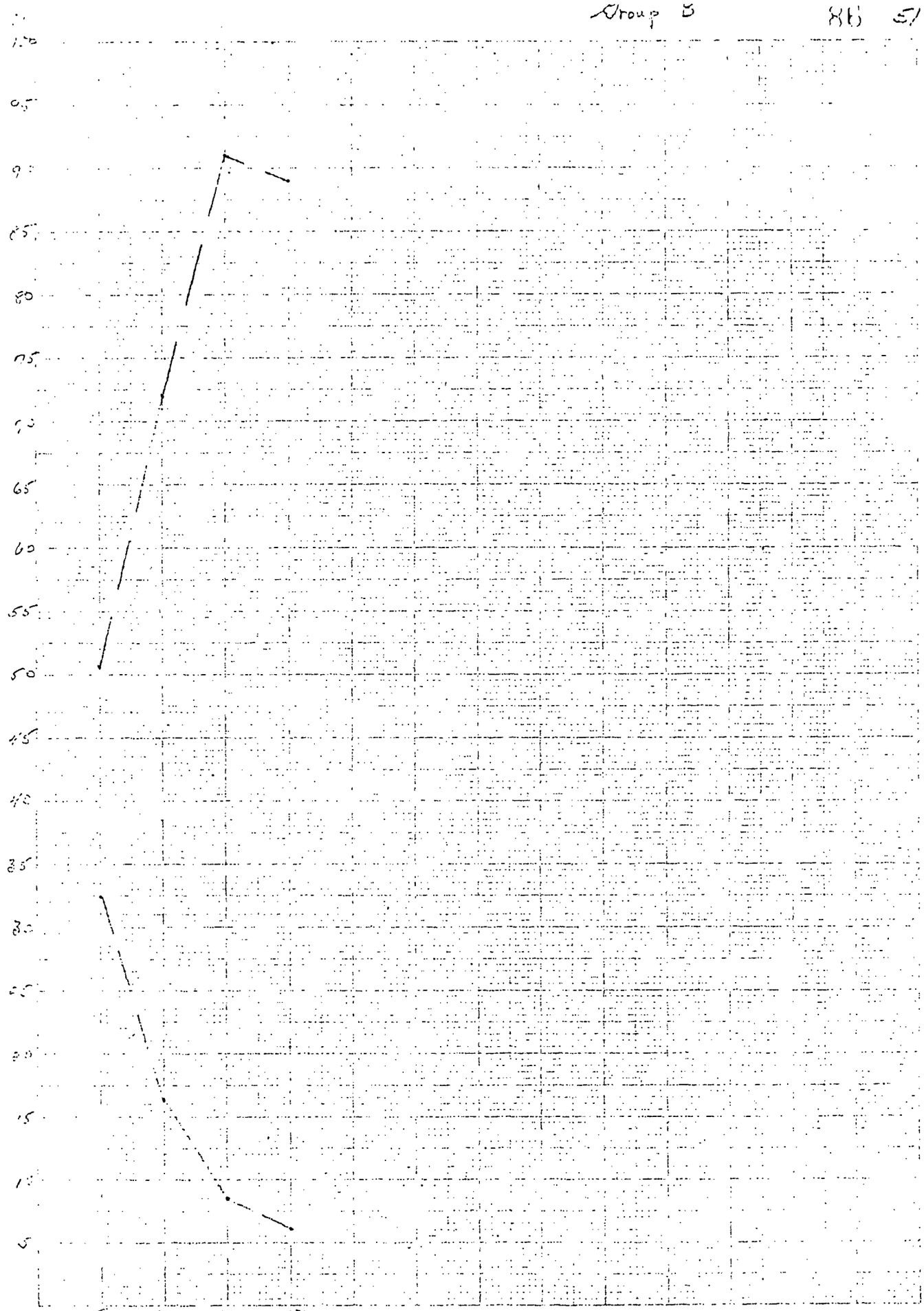

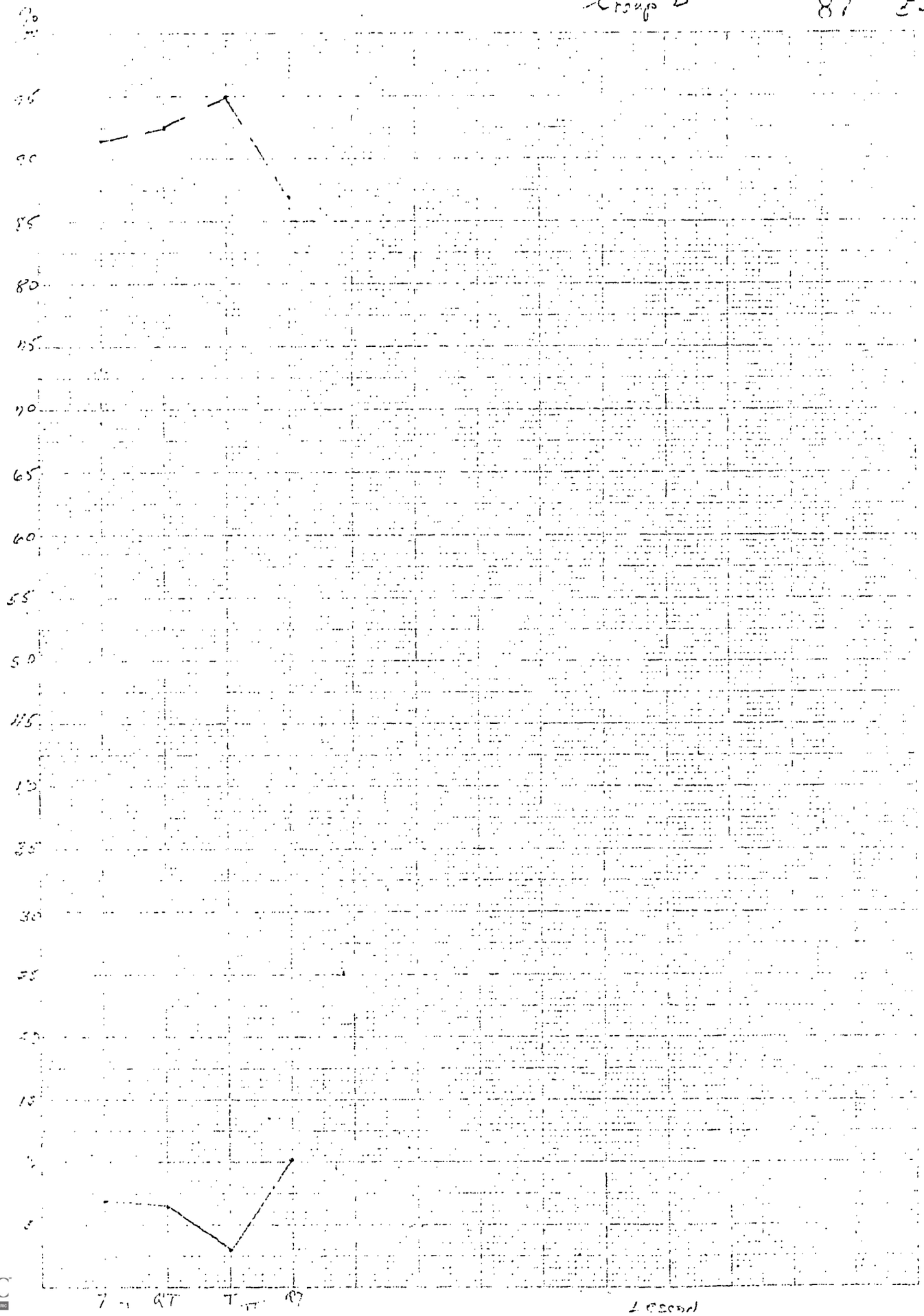
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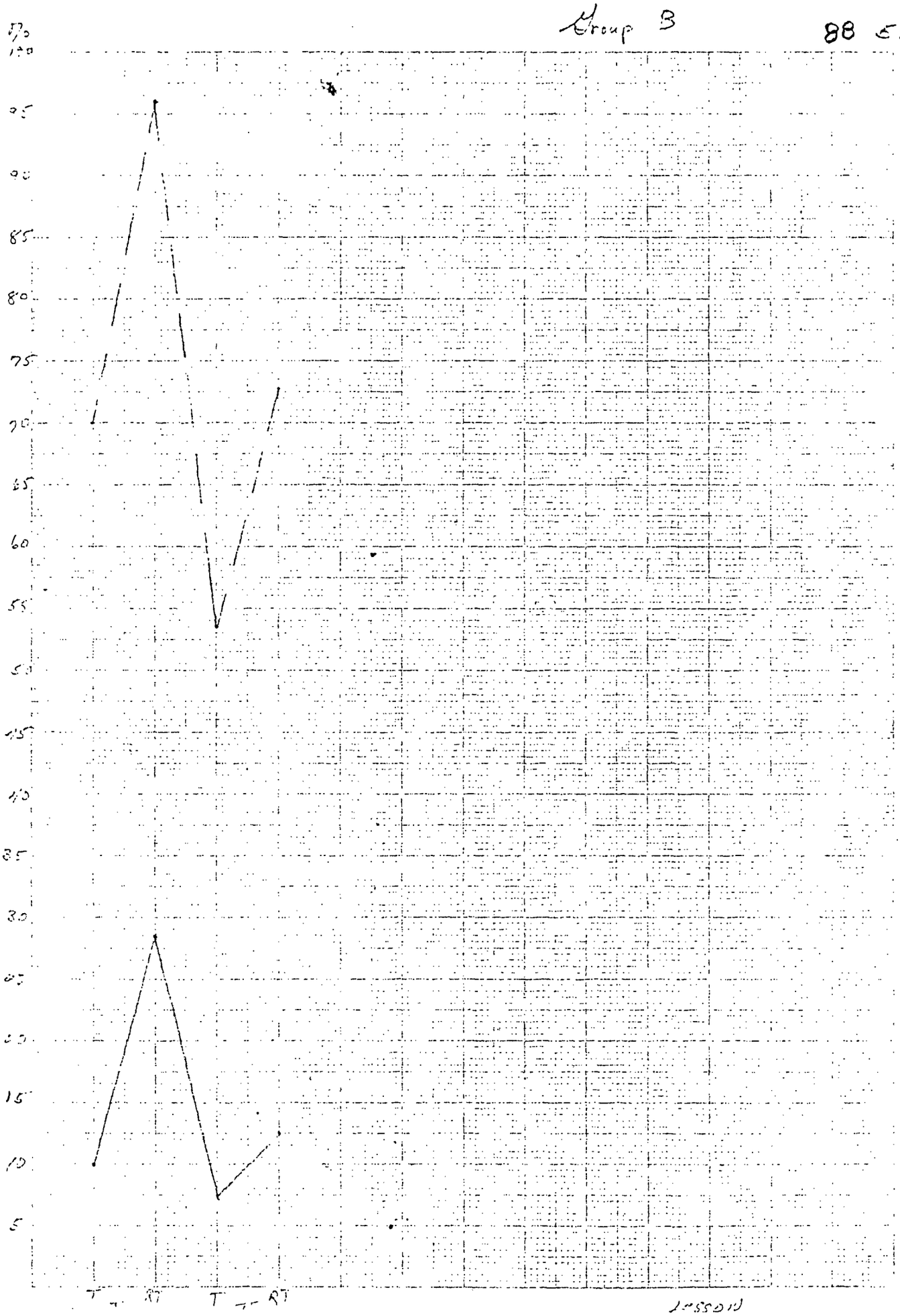
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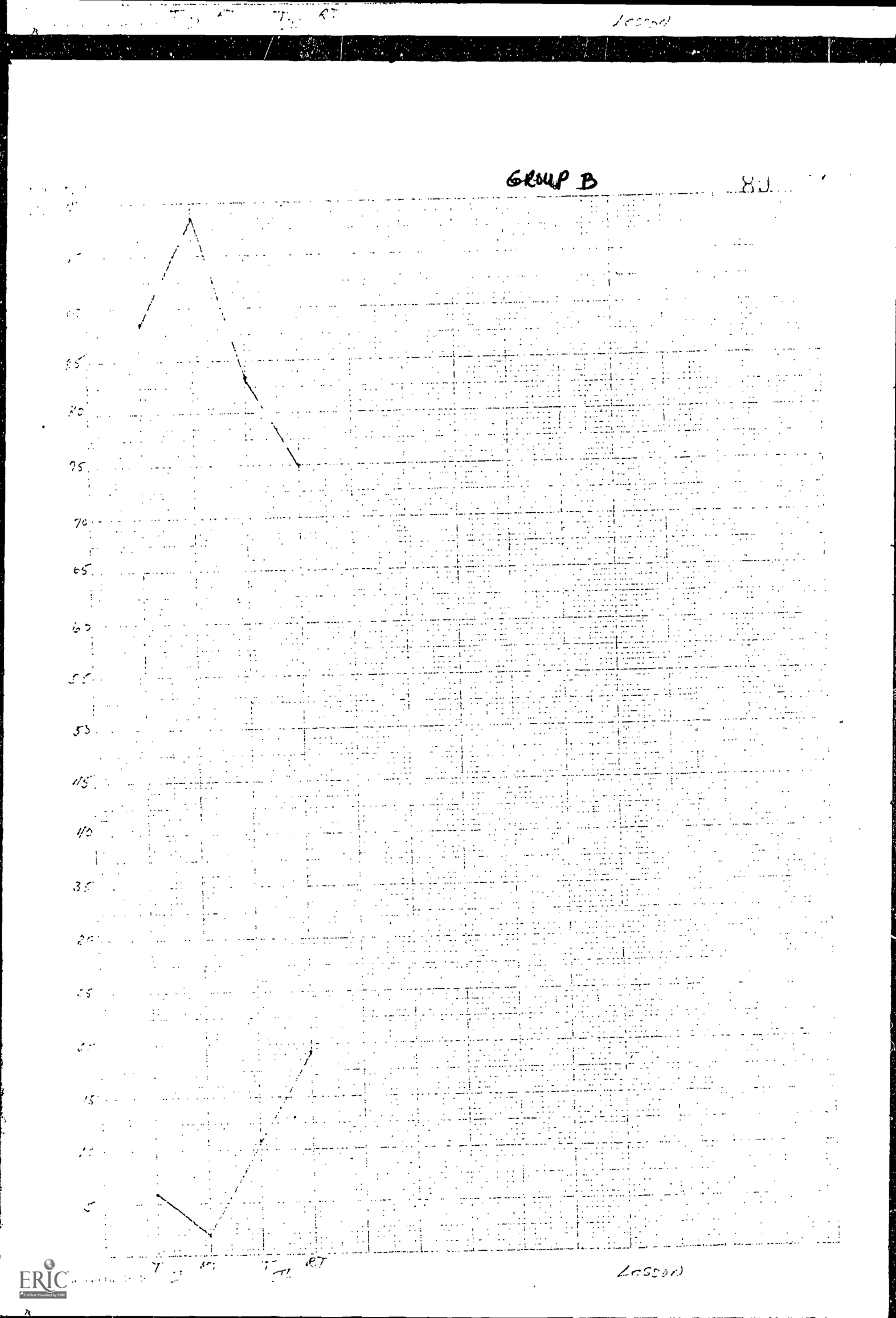
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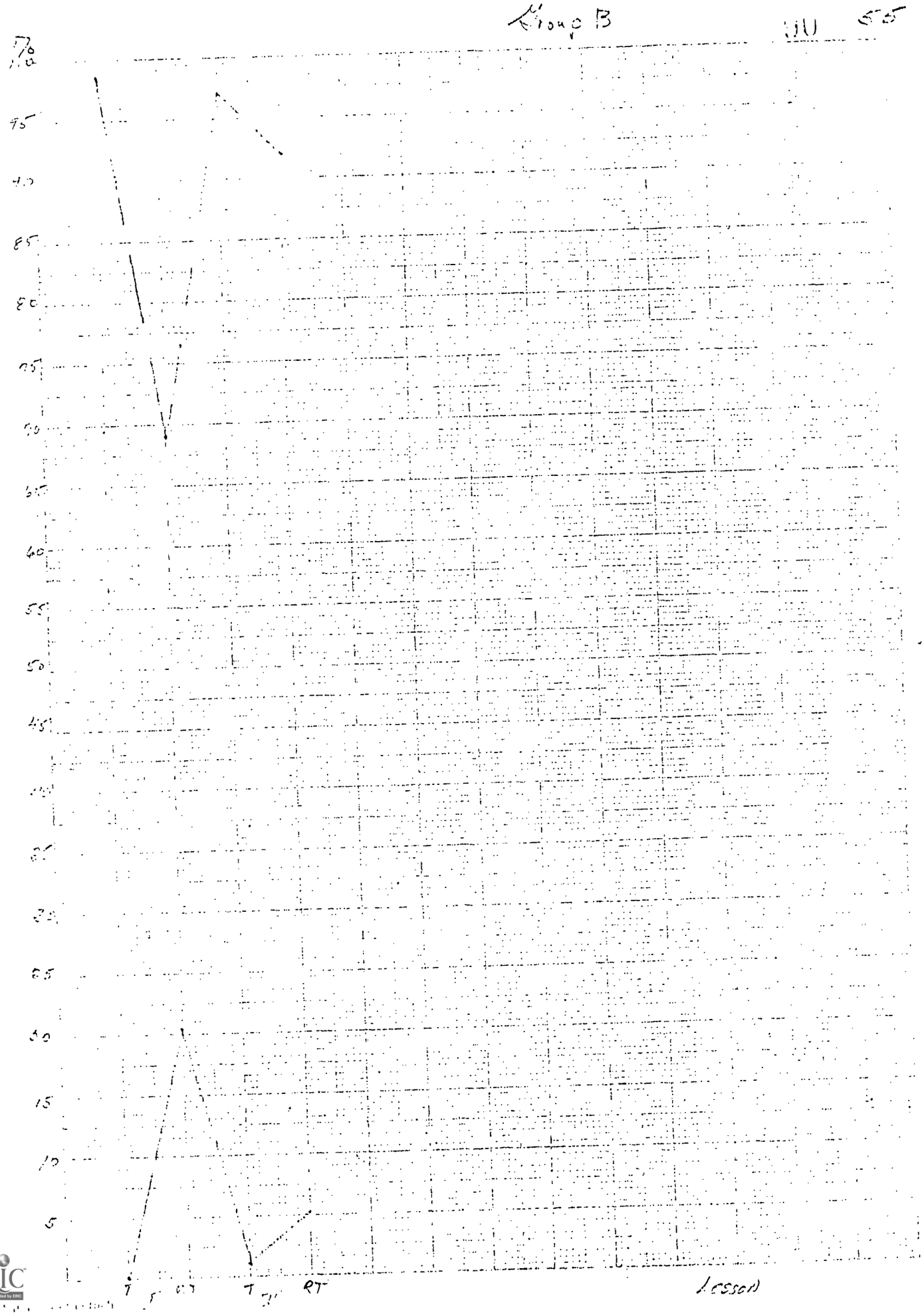
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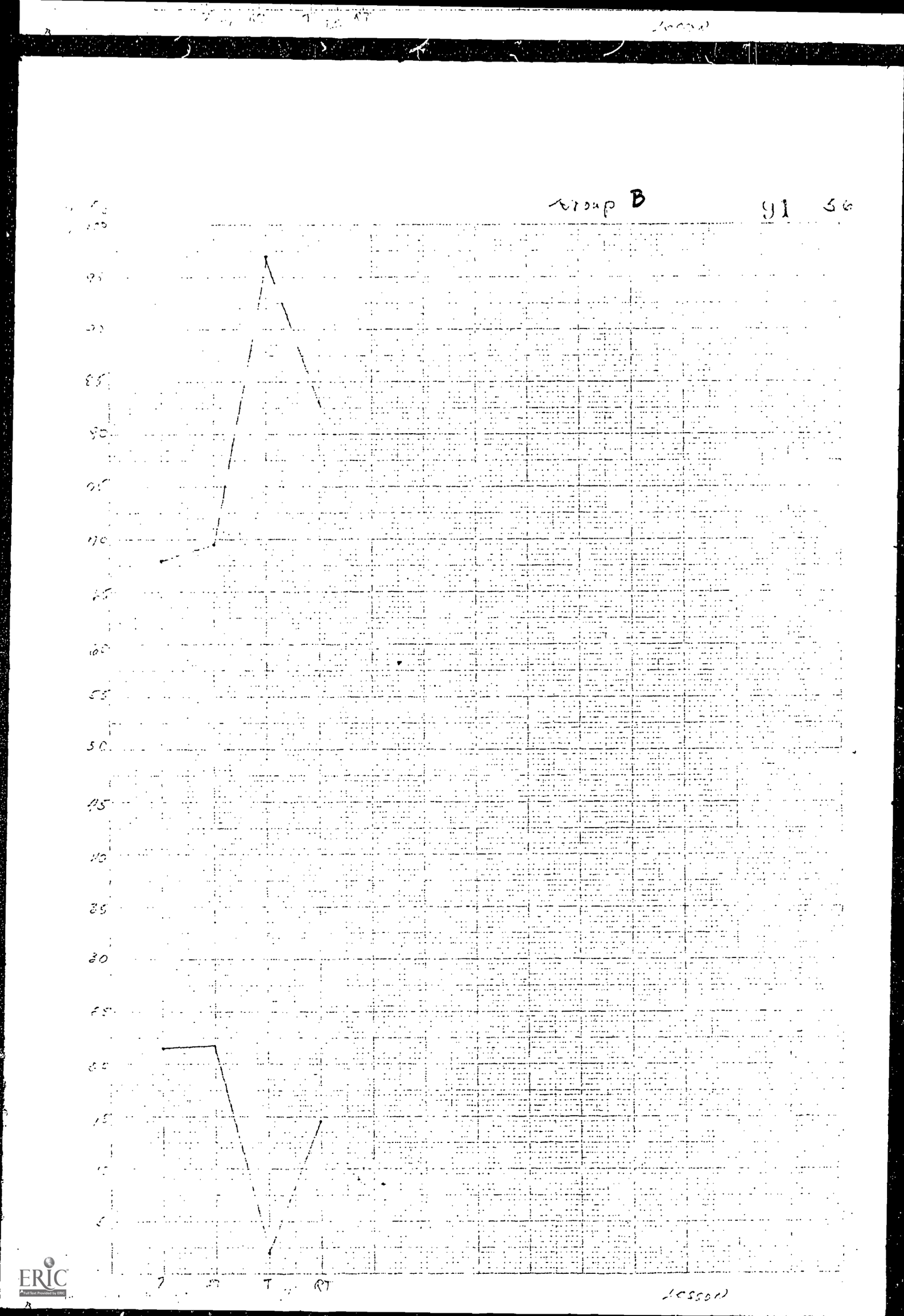
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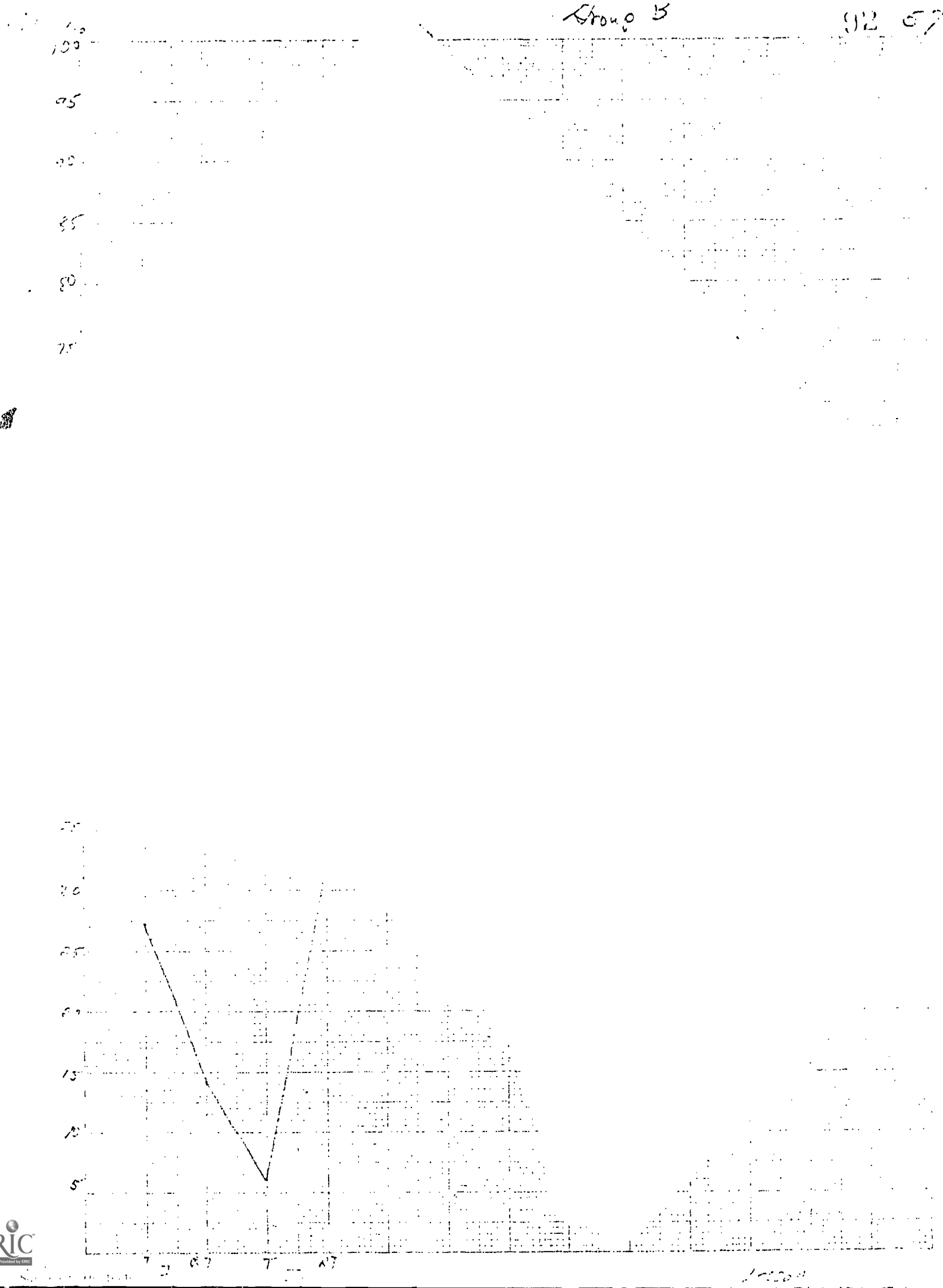
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