STANDARDISATION
OF
MATHEMATICAL ABILITY TEST
FOR THE DELTA CLASSES OF GUJARAT

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CONTENT

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FOREWORD

The world of to-day is characterized by rapid socio-economic changes. Citizens of democratic society in a world of keleidoscopic changes must be trained to make crucial decision in novel situations. They must be able to solve the problems aptly and efficiently as they arise. Does the study of Mathematics develop competence in these aspects of life? Mathematics has a place in a programme of democratic education if, and only if, a student becomes, through its study, more capable to cope with life and to wrestle with the problems of life.

Mathematics is considered to be a difficult subject. Its nature is abstract. This makes it basically a difficult subject. There are reasons why we find comparatively a larger number of backward students in Mathematics. A vast section of our society which has remained backward educationally all these years is to be helped to come up to the level of educationally advanced communities. Therefore, the portals of the schools have been thrown open to these people. They have their own difficulties. There is no body to help them in their studies at home. A good teacher cannot but take into account this new factor that has come into play in the field as a result of mass education.

Many would support the contention that remedial teaching is a ' must ' in Mathematics. This, naturally, requires adequate tools of measurement in Mathematics. They will be of immense value in locating the trouble-spots in the subject.

The present study is, therefore, of considerable value as it proposes to assess mathematical ability of a student when he completes seven years of schooling. In this investigation, Shri G. B. Shah is concerned with, " Construction and Standardisation of a mathematical ability test for the delta classes of Gujarat ". I am confident that the study will prove of great value to research workers as well as to secondary school teachers.

S. N. MUKERJI.

PART I

CHAPTER 1

Introduction

To-day Mathematics has become an eye-sore to many students and it is considered to be cold and austere. Besides the drab and dull teaching of Mathematics, the imperfect evaluation tools and the abstract content of the Mathematics Syllabus have been in no small measure responsible for this stigma attached to Mathematics. So it is the task of all Mathematics teachers to bring down Mathematics from the realm of abstraction to concrete life and spare no pains to improve both the methods of teaching and testing.

It has been suggested that one of the reasons of the relatively small proportion of pupils who can be successful at Mathematics is that the foundations are not well and truly laid in the primary schools. The significance of number relation and the concepts of size, time and weight sometimes tend to be ignored in favour of slavish learning of rule of thumb techniques which lead automatically but incomprehensively to the correct answer. Children become puzzled when they carry out operations, the significance of which is not comprehended but which, nevertheless, give the answers which are accepted as correct.

Mathematics is essentially a difficult subject. It is abstract in character and unlike most of the other subjects of the curriculum the answers to questions are either right or wrong. American investigations have shown that the students groups who are successful in Mathematics are drawn from the higher ranges of intelligence. Many would reject the view that ability in Mathematics demands high intelligence, but would support rather the contention that Mathematics possesses a special ability which enables them to become proficient in this awkward

and difficult intellectual activities. Theories of the nature of mathematical ability are of minor importance ; what is vital is that more highly skilled mathematicians be trained in our schools and universities.

Mathematics in our schools is taught mostly for computational skills. Most of the students are not helped in developing mathematical thinking. To them Mathematics is magic and not logic. That the reverse is true can be well understood when such paradox given in the test are brought before the class and the underlying mathematical principles explained.

CHAPTER 2

The Present Investigation

The problem of the present investigation is: To construct and standardize a test of mathematical ability for the delta classes. The use of this test will be restricted to assess what we call mathematical ability of Gujarati children after they have completed the seventh standard. Incidently the test will be useful to :

1. evaluate the mathematical ability of a student who is about to complete his seven years of primary education;
2. evaluate the mathematical ability of a student seeking admission in Std. VIII at secondary school level;
3. in the selection of pupils at Std. VIII in multipurpose schools;
4. predict the future success of a student in mathematics.

The present investigation is first of its sort at least in Gujarat. There are, in Gujarat, a number of achievement tests and a few aptitude tests for different subjects. Achievement tests in algebra, geometry and arithmetic are divised separately by so many investigators so far. Here is the first attempt to provide a test which will assess the ability in Mathematics as a whole.

What is Ability ?

"Ability means power to perform responsive acts."[1] These acts may be complex co-ordinated movements, solutions of intellectual problems discriminating judgements of appreciations or other sorts of behaviour. The amount of a person's ability in a given direction is ordinarily expressed in terms of the difficulty or complexity of the tasks he can perform, the number he can perform specified levels of difficulty, or the speed and precision of his performance.

What does an Ability Test Measure ?

Ability tests are designed to appraise what an individual can do under favourable conditions when he is trying to do his best.[2]

Any ability test measures performance at the time of testing. From this performance we may hope to make one or more variety of different inferences. We may want to infer how well each individual will do in learning some new task, *i.e.*, prognosis of future achievement. We may want to make inferences about the organisation or structure of human abilities, *i.e.* what goes with what. We may hope to unreveal the casual factors in individual abilities or disabilities. That is why the individual fails or succeeds with a particular task. All these are different sorts of inferences. The basic evidence in every case is performance on a set of test tasks. When the ablest individual with a wealth of general life-experiences is unlikely to acquire abilities such as these unless they have been specifically taught. We will frequently want to measure the extent to which abilities, such as these, dependent directly upon formed instruction have been acquired.

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[1] Bingham. 'Aptitude and Aptitude Testing', New York: Harper and Brothers p. 17.

[2] Thorndike and Hagen, Measurement and Evaluation in Psychology and Education. New York: John Wiley and Sons. p. 202.

What is Mathematical Ability ?

A sort of confusion prevails about the very existence of mathematical ability as a separate measureable entity. Philip E. Vernon recently in his series of articles on "The Classification of Abilities"[3] has touched this problem. He writes: "Each branch of science or mathematics develops its own separate ability, biology provides an obvious example. In arithmetic, the outstanding component is simple mechanical facility with number operations. Problem of reasoning is very much more a matter of general intelligence. Geometry is to some extent distinguished from arithmetic and algebra by a small but definite spatial ability component."[3]

As already stated ability is the power to perform designated responsive acts. Thus a person with mathematical ability can, is able to, has it in him to solve mathematical problems either at present time or after he has had the requisite training and experience. If then, we are asked to define mathematical ability we can safely say that it is a power to perform designated responsive acts in mathematics.

CHAPTER 3

Test Construction

Construction of a test is essentially a creative art. Lindquist, Ross, Thorndike and other authorities on test construction have laid down a number of principles for item writers. All these principles have been considered while constructing the items of this test.

The concept of mathematical ability is broad, abstract and indefinite. Test items must be specific, concrete and precise. They must consist of definite limited task. The problem of preparing a test is that of bridging the gap from broad general

[3] Educational Research Vol. II, No. 3, June 1960. New Educational Publishing Co. Ltd. London, p. 191.

concept to specific tangible task or test items. In the present test this is practically done under the task of construct validity. The question here is: what ultimately do we expect from a student who possesses what we call "mathematical ability"?

After careful and critical study of certain tests on Mathematics and thorough discussion of the concept with experts, the investigator prepared a catalogue of various objectives of Mathematics. It is worth-while to note here that the test will be valid to the extent it is in consonance with the content of the catalogue. Mathematical ability of a student at the completion of Std. VII should comprise the following skills and abilities:—

1. Skill to draw mathematical generalizations.
2. Computational skill.
3. Skill to interprete graphs and tables.
4. Skill to use mathematical instruments.
5. Rational reasoning.
6. Ability to apply mathematical principles to the practical problems of life.
7. Ability to deal with decimals, fractions and percentage.

Assignment of Weightage

The problem of assigning proper weightage to each of these skills is of great importance. To be a valid tool test should measure all about mathematical ability and nothing but mathematical ability. Five expert judges were selected for assigning due weightage to each of these skills in terms of 100 marks. From their marking, average weightage for each skill was found out as shown in the following table:

Weightage given by Experts in Terms of 100 Marks

No.	Skill or ability	A	B	C	D	E	Average percentage
1.	Skill to draw mathematical generalizations	10	12	15	13	15	13
2.	Computational skill	8	13	11	9	10	10
3.	Skill to interprete graphs and tables	15	15	12	12	16	14
4.	Skill to use mathematical instruments	5	4	2	2	3	3
5.	Rational reasoning	18	15	13	17	18	16
6.	Ability to apply mathetical principles to the practical problems of life	17	15	20	20	12	17
7.	Ability to deal with decimals, fractions and percentage	27	26	27	27	26	26
							99

With these objectives in view the investigator embarked upon the construction of test items. Two broad types of items were constructed :

(1) Multiple choice items.
(2) Simple recall.

The draft of items (blue-print) was sent to 5 experienced teachers along with a copy of the weightage assigned by the experts. They were requested to go through the items and judge whether they measured a particular skill. The investigator had personal discussions with three of them on the items on which the opinions differed. As a result, such items were revised and rewarded.

Skill-wise distribution of items in the final form

Below is given the skill-wise distribution of items in the final form. It is obvious that there is almost a perfect compatibility between the experts' weightage and the weightage in the final form.

Skill-wise distribution of items in the final form

No.	Ability or skill	Items No.	Total No. of items	Percentage
1.	Ability to draw mathematical generalisation	23, 29, 31, 32, 40, 47, 53, 58	8	13
2.	Computational skill	27, 28, 42, 49, 56	5	8
3.	Ability to interprete graphs and tables	13, 14, 15, 16, 17, 18, 19, 20, 21	9	15
4.	Ability to use mathematical instrument	11, 26	2	3
5.	Rational reasoning	1, 2, 6, 7, 8, 9, 10, 12, 35	9	15
6.	Ability to apply mathematical principles to the practical problems of life	3, 4, 5, 33, 44, 48, 50, 51, 54, 60	10	17
7.	Ability to deal with decimals, fractions and percentage	22, 24, 25, 30, 34, 36, 37, 38, 39, 41, 43, 45, 46, 52, 55, 57, 59	17	28
			60	99

CHAPTER 4

Standardisation Procedure

Before the test scores can be made comprehensible, interpretable and meaningful, it is always necessary to subject them

to vigorous statistical treatment. The standardisation of a test is a statistical procedure which gives meaning to the test as a whole. Standardisation procedure involves:—

1. Statistical analysis of the data;
2. determining validity of the test;
3. determining reliability of the test;
4. fixing the norms.

1. Statistical analysis of the test results

There are 60 items in the test. The maximum possible score, therefore, is 60. The highest score obtained on the test is 57 and the lowest one is 5. Thus the range is of 52 (57-5).

Mean Score = 30.8
Median Score = 30.685
Standard deviation = 9.6

The above results of mean, median and standard deviation have been obtained on a sample of 972 pupils. It is necessary to test the reliability of these statistics. All the three results mentioned above are highly reliable considering the narrow ranges within which they lie.

Nature of the distribution of test-scores

The values of mean, median and S.D. do give some idea of the way the test scores are distributed. According to E.B. Green,[1] the best test of a satisfactory tool is the normal distribution of its scores. Any significant deviation of the distribution either to the right or to the left signifies any of the following:—

(a) The test items are not properly selected.
(b) The sample is biased.

The present test is tested for its distribution by calculations of "Skewness" and "Kurtosis".

[1] E.B. Green: "Measurement of Human Behaviour" New York: The Odyssey Press, 1952.

Skewness :— $Sk = \frac{P_{90} + P_{10}}{2} - P_{50}$

$= \frac{43.65 + 17.9}{2} - 30.68$

$= 0.09$

Significance of Skewness

$\sigma Sk = \frac{0.5185\ D}{\sqrt{N}}$ where $D = P_{90} + P_{50}$

$= \frac{0.5185 \times 61.55}{31.18}$

$= 1.02$

Critical ratio $(t) = \frac{Sk}{\sigma Sk}$

$= \frac{0.09}{1.02} = 0.088$

The critical ratio is very low. Hence 0.09 represents no real deviation of this frequency distribution from normality.

Kurtosis :— $Ku = \frac{Q}{P_{90} - P_{10}}$

$= \frac{6.7}{43.65 - 17.90}$

$= 0.26$

It is to be noted that Ku for a normal curve should be 0.263. Ku of the curve obtained here differes by 0.003. This clearly indicates that the curve is very slightly leptokurtic.

Significance of Ku

$Ku = \frac{0.28}{N}$

$= \frac{0.28}{31.18}$

$= 0.0073$

Critical ratio $= \frac{Ku}{\sigma Ku}$

$= \frac{0.003}{0.0073}$

$= 0.41$

This is well within the ± 1.96 limits. Hence $Ku = 0.26$ represents no real deviation of this frequency distribution from normality.

The Chi-Square test

The χ^2 test is applied to compare the experimentally obtained results with those to be expected theoretically on some hypothesis. The hypothesis in the present case is that the distribution of the scores on the present test follows the normal curve and that any deviation of the obtained data from the theoretically expected data is insignificant and due to chance factors only. The following table shows the application of χ^2 test.

The high value of P shows that the distribution is normal, the deviation being due to chance factors only.

Chi-Square Test

Class intervals	Observed frequency *fo*		Expected frequency *fe*	$\frac{(fo-fe)^2}{fe}$
1- 5	3	16	19	0.47
6-10	13			
11-15	44		42	0.09
16-20	77		89	1.62
21-25	139		146	.33
26-30	203		190	.88
31-35	189		190	.05
36-40	151		146	.16
41-45	88		89	.01
46-50	45		42	.21
51-55	15	20	19	.05
56-60	5			
	972		972	3.87

$df = 9 \therefore$ P is above 0.90.

Validity

The validity of a test can be judged from two aspects viz.

1. Internal validity;
2. External validity.

1. Internal validity of the present test

Internal validity embraces three different aspects of a test viz.

(i) Curricular validity;
(ii) Concept validity;
(iii) Internal consistency.

As this is an ability test regardless of any syllabus, the question of curricular validity does not arise at all.

As regards the concept validity of the test, the test items were constructed and selected in view of the different skills and abilities as discussed in the previous chapter.

The internal consistency of the present test has been checked up by the item total test correlation and the subsequent selection of the test items. Each item in the present test has item-total test correlation not less than 0.25. The average item-total test correlation is 0.47. According to Thorndike; "an item total test correlation 0.25 represents an outstanding validity".[1]

2. External Validity of the present test

External validity includes the following varieties:—

(i) Congruent validity;
(ii) Concurrent validity;
(iii) Predictive validity.

As this is the first test of its sort in Gujarat, its congruent validity could not be found out.

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[1] R. L. Thorndike: "Personnel Selection"; p. 293. New York: John Wiley & Sons.

In order to find the concurrent validity of the test, the scores of 200 students on the present test were correlated with the examination scores. The examination marks were converted to Z scores. The correlation between two sets of scores was 0.74.

As regards the present test, success of the testees at the S.S.C. examination in mathematics can be considered for predictive purpose. This will at least require four years. This test was given to pupils in the beginning of Std. VIII and the standardised achievement tests in Mathematics were given after they completed the course of Std. VIII. The correlation coefficient of 0.80, was indicative of the fact that the test was fairly valid.

Reliability

In the present test, reliability has been found out by the following two methods :—

(i) Kudar-Richardson method.

(ii) Split-half method.

Reliability obtained by Kudar-Richardson method is 0.897 which is quite satisfactory. Reliability obtained by Split-half method after the application of Spearman-Brown formula is 0.918.

Norms :—Two types of norms were established for the present test

(i) Percentile norms.

(ii) Standard score norms.

These norms are given elsewhere in the book.

Sample :—The sample selected for the present test was sufficiently broad. In all, 972 students were selected from the wide variety of schools by the technique of random sampling.

The investigator was keen to take not more than 80 students from any school for the purpose of administration. There were number of schools with only one division. The sample

was randomized by selecting every third or fourth student from the class register where there were two or more divisions. The schools of different varieties were selected in order to give due place to the different factors. The following types were kept in mind while selecting the schools.

(1) Rural Schools
(2) Semiurban Schools
(3) Urban Schools
(4) Boys Schools
(5) Girls Schools
(6) Mixed Schools
(7) Multipurpose Schools
(8) Agricultural Schools
(9) Schools with Std. VIII & IX only
(10) Schools upto S.S.C. class
(11) Commercial Schools
(12) Technical Schools

CHAPTER 5

Observations and Suggestions

Observations

After statistical analysis of the data the investigator made the following observations :

1. Sex and mathematical ability :

Comparative data of Boys and Girls

	N	Mean	S.D.
Boys	651	31.59 (M_1)	10.22 (σ_1)
Girls	321	29.37 (M_2)	10.46 (σ_2)

C.R. is 3.17 and the degrees of freedom for use in testing the significance of the difference between the Means of the Boys and the Girls are 650 + 320 = 970. Entering Table D with 970 degrees of freedom, it is found that t entries of 1.96 at the .05 and of 2.58 at the .01 levels. The obtained C.R. of 3.17 is

significant at both these levels. Therefore the inference that Boys are superior to Girls in Mathematical Ability can be drawn with good confidence.

2. Mathematical ability of the students of delta classes of Gujarat is found to be normally distributed.

3. High correlation between the test scores and the examination scores is indicative of the fact that the student who fairs well on this test is almost sure to shine out in Mathematics. This is more true because there is a significant correlation between the test scores and the scores on Standardized Achievement Tests in Mathematics.

Scope for further work

1. Grade norms of the test for standard V, VI and VII may be established.

2. Predictive validity of this test may be established by correlating the test scores with the scores in mathematics at the S.S.C. examination.

3. Predictive validity can also be established by measuring the future success of the testees who have taken commercial and technical courses in multipurpose schools.

Conclusion

The investigator wishes to raise one question before he concludes. At the end of seven years of schooling, the students practically know nothing about algebra. They of course know a good deal of geometry. Is it worthwhile to lable this test as a test of Mathematical Ability ? The answer is yes. A careful glimpse over the test will reveal the following points to support the answer.

1. Items like 8, 9, 10 contain a sequential series. The students learn this type of examples later in algebra too.
2. Interpretation of graphs is but an aspect of algebra. The nature of problems in graph may defer. The final

form of the test contains 5 items on graph. Items No. 13, 14, 15, 16, 17.

3. Items pertaining to some important generalizations are equally applicable to algebra as well. *e.g.* Items No. 23, 34, 32, 40, 47, 53, 58.
4. Truly speaking algebra is but arithmetic in letters. Practically there is little which is uncommon as regards the basic principles.
5. This is a test to assess the mathematical ability of a student at so early a stage when a very thin line demarcates the two subjects.

PART II

MANUAL OF THE TEST

APPENDIX A

Instructions to Testers

1. The students should be seated far apart to avoid copying.
2. They should start the work afresh *i.e.* in the first period, if possible.
3. Try to avoid any sort of disturbance in the vicinity of the class.
4. Before giving them the test write the three examples given in Appendix—E on the black board and show them how to answer the questions in the test.
5. Give one hour after they start their work.
6. Let them not ask any thing after the work is started.
7. After the test booklets are distributed, read aloud the instructions given on the front page of the test.
8. Before the actual work starts the tester should see whether each of them have a pencil or a pen.
9. See that not a single copy of the test is lost.
10. Give one mark for one correct answer and zero for a wrong answer. For interpreting the raw score, refer to the second part of the book-let.

APPENDIX B

PERCENTILES NORMS

Percentile	Scores	Percentile	Scores	Percentile	Scores
1	8	35	27	69	36
2	11	36	27	70	36
3	12	37	28	71	36
4	13	38	28	72	36
5	14	39	28	73	37
6	15	40	28	74	37
7	16	41	29	75	37
8	17	42	29	76	38
9	17	43	29	77	38
10	19	44	29	78	38
11	20	45	29	79	39
12	20	46	30	80	39
13	20	47	30	81	40
14	20	48	30	82	40
15	21	49	30	83	40
16	21	50	31	84	40
17	22	51	31	85	41
18	22	52	31	86	41
19	22	53	31	87	42
20	23	54	32	88	43
21	23	55	32	89	43
22	23	56	32	90	44
23	24	57	32	91	44
24	24	58	33	92	45
25	25	59	33	93	45
26	25	60	33	94	46
27	25	61	34	95	47
28	26	62	34	96	49
29	26	63	34	97	50
30	26	64	34	98	51
31	27	65	35	99	54
32	27	66	35	100	60
33	27	67	35		
34	27	68	35		

APPENDIX C

Standard Score Norms

This raw scores obtained on the test are converted into standard scores with a mean of 50 and standard deviation of 10. The formula[4] applied for the conversion is

$$Z = \frac{\sigma'(X - M)}{\sigma} + M'$$

Where σ' is the standard deviation of the standard scores.
σ is the standard deviation of the raw scores.
M' is the mean value of the standard score distribution.
M is the mean value of the raw scores.
X is any raw score on the test.
Z is the standard score corresponding to x.

Standard Scores with Mean = 50 & S.D. = 10

Raw scores	Z-scores	Raw scores	Z-scores	Raw scores	Z-scores
1	18.94	21	39.74	41	60.54
2	19.98	22	40.78	42	61.58
3	21.02	23	41.82	43	62.62
4	22.06	24	42.86	44	63.66
5	23.10	25	43.90	45	64.70
6	24.14	26	44.94	46	65.74
7	25.18	27	45.98	47	66.78
8	26.22	28	47.02	48	67.82
9	27.26	29	48.06	49	68.86
10	28.30	30	49.10	50	69.90
11	29.34	31	50.14	51	70.94
12	30.38	32	51.18	52	71.98
13	31.42	33	52.22	53	73.02
14	32.46	34	53.26	54	74.06
15	33.50	35	54.30	55	75.10
16	34.54	36	55.34	56	76.14
17	35.58	37	56.38	57	77.18
18	36.62	38	57.42	58	78.82
19	37.66	39	58.46	59	79.26
20	38.70	40	59.50	60	80.30

APPENDIX D

Letters grades assigned to Scores

Letter grade	Limits in terms of σ units	Limits in terms of raw scores	Limits in terms of Z-Scores
A	Above M+1.8 σ	48 and above	68 and above
B	Between M+ .6 σ & M−1.8 σ	Between 37 & 47	Between 57 & 76
C	Between M+ .6 σ & M− .6 σ	Between 25 & 36	Between 44 & 55
D	Between M− .6 σ & M−1.8 σ	Between 13 & 24	Between 31 & 43
E	Below M−1.8 σ	12 and Below	30 and below

APPENDIX E

Sample Exercise

ઉદાહરણ પત્ર

વિદ્યાર્થી મિત્રો,

તમને થોડી જ વારમાં ગણિતશાસ્ત્રની એક કસોટી આપવામાં આવશે. તેમાં પૂછેલા પ્રશ્નોના જવાબ કઈ રીતે આપવા તે માટે નીચે ચાર ઉદાહરણો આપ્યાં છે. તેનો ધ્યાનપૂર્વક અભ્યાસ કરો.

ઉદાહરણ : ૧

નીચેનામાંથી કયા એક દાખલાનો જવાબ ૦.૦૧૮ આવશે ?

: ૧ :	૦.૨	૦.૯
: ૨ :	૨.૦	૦.૯
: ૩ :	૦.૨	૦.૦૯
: ૪ :	૦.૦૨	૦.૦૯

ઉપરના પ્રશ્નમાં આપેલા ચાર જવાબોમાં સાચો જવાબ : ૩ : છે તેથી તેની નીચે લીટી દોરવામાં આવી છે.

ઉદાહરણ : ૨

કોઈપણ સંખ્યાને તે જ સંખ્યા વડે ભાગવામાં આવે તો જવાબ

:૧: એક કરતાં વધુ આવે.

:૨: એક કરતાં ઓછો આવે.

:૩: શૂન્ય આવે.

:૪: એક આવે.

ઉપરના અધૂરા વાકય માટે આપેલા ચાર જવાબોમાં સાચો જવાબ :૪: છે તેથી તેની નીચે લીટી દોરી છે.

ઉદાહરણ : ૩

૬ ફૂટ લાંબા લોખંડના સળીયાના એક એક ફૂટ લાંબા ૬ કકડા કરાવવાના છે. સળિયા ઉપર એક કાપ મૂકવાનો ભાવ ૧ આનો છે તો ૬ કકડા કરવાનો ખર્ચ કેટલા આના થશે ? ૫

ઉપરના પ્રશ્નનો જવાબ ૫ આવે તેથી આપેલી ખાલી જગ્યામાં ૫ લખ્યા છે.

APPENDIX F

Key of the Test

૧	૧૨	૧૨	૧½" અથવા ૧.૫"
૨	શનિવારે	૧૩	૧૦
૩	૧૨૦	૧૪	શનિવારે
૪	૯૬	૧૫	બુધવારે
૫	૧૪	૧૬	મંગળવારે
૬	૨	૧૭	૨૦
૭	૮	૧૮	૭
૮	૧૦	૧૯	૫૨
૯	૩૨	૨૦	સોમવારે
૧૦	૨૧	૨૧	શુક્રવારે
૧૧	૨૨	૨૨	:૧:

২৩	:১:	৪৩	:১:
২৪	:২:	৪৪	:৩:
২৫	:৪:	৪৫	:৩:
২৬	:২:	৪৬	:২:
২৭	:১:	৪৭	:৪:
২৮	:১:	৪৮	:২:
২৯	:৩:	৪৯	:৪:
৩০	:১:	৫০	:৩:
৩১	:২:	৫১	:৩:
৩২	:২:	৫২	:২:
৩৩	:২:	৫৩	:৩:
৩৪	:৩:	৫৪	:৩:
৩৫	:৩:	৫৫	:৩:
৩৬	:৪:	৫৬	:৪:
৩৭	:৪:	৫৭	:১:
৩৮	:২:	৫৮	:৩:
৩৯	:২:	৫৯	:৩:
৪০	:২:	৬০	:১:
৪১	:১:		
৪২	:২:		