



SAMPLE CONTENT

Mathematics Part - II

IQB Important Question Bank

Based on New Paper Pattern of Maharashtra State Board



STD. X

(ENG. MED.)

Target Publications Pvt. Ltd.

Written as per the latest syllabus prescribed by the Maharashtra State
Bureau of Textbook Production and Curriculum Research, Pune.

Mathematics Part - II

IQB Important Question Bank

STD. X

Salient Features

- A compilation of Most Important Questions.
- A great resource for quick revision.
- Covers all types of Questions according to the Paper Pattern.
- Includes Model Question Paper for self evaluation.
- Inclusion of **QR Codes** for students to access the video on the 'Latest Paper Pattern', as prescribed by the Board as well as to access the 'Solutions' for the Model Question Paper.

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PREFACE

“Std. X IQB Mathematics Part - II is a treasure house of the most important questions that’d help students to face the Board Examination confidently. This book is created in accordance with the latest syllabus and evaluation pattern as mentioned in the handbook ‘Evaluation Pattern for Std. IX and X’ by the Maharashtra State Bureau of Textbook Production & Curriculum Research, Pune.

IQB (Important Question Bank) covers all types of questions of Std. IX and X according to the Paper pattern. Every chapter consists of questions, segregated mark-wise in different sections to help students for better and effective preparation. We have provided One Model Question Paper at the end of the book that enables students to assess their level of preparation for the Board examination.

We have amalgamated technology with education and resultantly provided **QR Codes** for students to access video on the ‘Latest Paper Pattern’ given by the Board. The **QR Codes** also provides students an access to the ‘Solutions’ given for the Model Question Paper.

Armed with an arsenal of choicest of questions and relevant answers, we are confident that this book will cater to the needs of students across categories and effectively assist them to achieve their goal.

Please write to us at: mail@targetpublications.org

A book affects eternity; one can never tell where its influence stops.

Best of luck to all the aspirants!

From,
Publisher

Edition: First

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This work is purely inspired upon the course work as prescribed by the Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. Every care has been taken in the publication of this reference book by the Authors while creating the contents. The Authors and the Publishers shall not be responsible for any loss or damages caused to any person on account of errors or omissions which might have crept in or disagreement of any third party on the point of view expressed in the reference book.

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PAPER PATTERN

- There will be separate question papers for Part I and Part II of 40 marks each.
- Duration of each paper will be 2 hours.

Question No.	Type of Questions	Total Marks	Marks with option
1.	(A) Solve 4 out of 6 subquestions (1 mark each)	04	06
	(B) Solve 2 out of 3 subquestions (2 marks each)	04	06
2.	(A) Solve 4 out of 4 MCQ (1 mark each)	04	04
	(B) Solve 2 out of 3 subquestions (2 marks each)	04	06
3.	(A) Solve activity based 2 out of 3 subquestions (2 marks each)	04	06
	(B) Solve 2 out of 3 subquestions (2 marks each)	04	06
4.	Solve 3 out of 4 subquestions (3 marks each)	09	12
5.	Solve 1 out of 2 subquestions (4 marks each)	04	08
6.	Solve 1 out of 2 subquestions (3 marks each)	03	06
Total Marks		40	60

Note: The subquestions in Q. No.1 will be based on syllabus of Std. IX.

The division of marks in question papers as per objectives will be as follows.

Mathematics - Part II	
Objectives	Percentage of marks
Previous knowledge	20
Knowledge and understanding	30
Application	30
Skill	20

[Reference: महाराष्ट्र राज्य पाठ्यपुस्तक निर्मिती व अभ्यासक्रम संशोधन मंडळ, पुणे
निर्मित मूल्यमापन आराखडा]

[P.S. Scan this QR Code to get a better understanding of the New Syllabus as well as Paper Pattern.]



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**Guidelines****Std. IX****Section 1: 1 Mark Questions**

These questions are based on std. IX syllabus and require very short solutions with direct application of mathematical concepts. Q. 1 (A) in the question paper will include these types of questions.

Section 2: 2 Marks Questions

These questions based on std. IX syllabus, require short solutions with application of one or two mathematical concepts from the syllabus. Q. 1 (B) in the question paper will include these types of questions.

Std. X**Section 1: 1 Mark Questions**

These are Multiple Choice Questions which either require short solutions or direct application of mathematical concepts. Q. 2 (A) in the question paper will include these type of questions.

Section 2: 2 Marks Questions

- **Type A**
These questions are from textbook and have short solutions with application of one or two mathematical concepts. Q. 2 (B) and Q. 3 (B) in the question paper will include these type of questions.
- **Type B**
These questions are activity based and generally include proofs and solutions, to be completed by filling the blanks. Q. 3 (A) in the question paper will include these type of questions.



Section 3: 3 Marks Questions

- **Type A**

These questions are from textbook with long solutions and may require application of two or more mathematical concepts. Q. 4 in the question paper will include these type of questions.

- **Type B**

These are open ended questions, for which students have to think independently and will require an application oriented vision for mathematics. They are based on the prescribed syllabus, but are out of the textbook. Q. 6 in the question paper will include these type of questions.

Section 4: 4 Marks Questions

These are challenging questions, based on the prescribed syllabus, but are out of the textbook. They require application of more than one mathematical competencies. Q. 5 in the question paper will include these type of questions.

Chapter

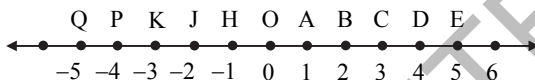
1

Basic Concepts in Geometry

1.1

1 Mark Questions

1. Find $d(J, A)$ with the help of the number line given below.



Sol: The co-ordinates of the points J and A are -2 and 1 respectively.

Since, $1 > -2$

$$\therefore d(J, A) = 1 - (-2)$$

$$= 1 + 2$$

$$\therefore d(J, A) = 3$$

2. If the co-ordinate of A is 1 and that of B is 7, find $d(A, B)$.

Sol: Co-ordinate of point A is 1.

Co-ordinate of point B is 7.

Since, $7 > 1$

$$\therefore d(A, B) = 7 - 1$$

$$\therefore d(A, B) = 6$$

3. Point M is the midpoint of seg AB. If $AB = 8$, then find the length of AM.

Sol: $d(A, B) = d(A, M) + d(M, B)$...[A - M - B]

$$\therefore 8 = d(A, M) + d(M, B)$$

$$\therefore 8 = d(A, M) + d(A, M) \quad \dots[\because d(A, M) = d(M, B)]$$

$$\therefore 2 d(A, M) = 8$$

$$\therefore d(A, M) = 4$$

$$\therefore l(AM) = 4$$

4. If $AB = 5$ cm, $BP = 2$ cm and $AP = 3.4$ cm, compare the segments.

Sol: $l(AB) = 5$ cm, $l(BP) = 2$ cm, $l(AP) = 3.4$ cm

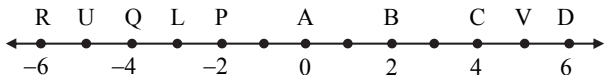
Since, $2 < 3.4 < 5$

$$\therefore l(BP) < l(AP) < l(AB)$$

i.e., seg BP < seg AP < seg AB



5. State the points which are equidistant from point B with the help of figure given below.



Ans: Points equidistant from point B are

- i. A and C,
because $d(B, A) = d(B, C) = 2$
- ii. D and P,
because $d(B, D) = d(B, P) = 4$

6. Write the following statements in 'if-then' form.

The opposite angles of a parallelogram are congruent.

Ans: If a quadrilateral is a parallelogram, then its opposite angles are congruent.

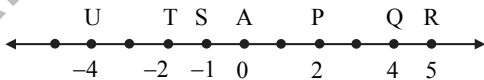
7. Write the converse of the following statement.

The diagonals of a rectangle are congruent.

Ans: If the diagonals of a quadrilateral are congruent, then that quadrilateral is a rectangle.

Practice Set

1. If the co-ordinates of points A and B are -5 and 2 respectively, then find $d(A, B)$.
2. Which figure is formed by three non-collinear points?
3. Point C is the midpoint of seg AB. If $AC = 5.5$, then find the length of AB.
4. If $PQ = 8$ cm, $QR = 2.3$ cm and $PA = 6.1$ cm, then compare the segments.
5. Write the pairs of points equidistant from P with the help of the given figure.



6. Write the following statement in 'if-then' form.
Diagonals of a rhombus bisect each other.
7. Write the converse of the following statement.
The alternate angles formed by two parallel lines and their transversal are congruent.
8. Write the converse of 'If the sum of measures of two angles is 90° , then they are complement of each other.'



Answers

1. 7
2. A triangle.
3. 11
4. $\text{seg QR} < \text{seg PA} < \text{seg PQ}$
5. i. Points A and Q
ii. Points R and S
6. If a quadrilateral is a rhombus, then its diagonals bisect each other.
7. If the alternate angles formed by two lines and their transversal are congruent, then the two lines are parallel.
8. The sum of the measures of complementary angles is 90° .

1.2

2 Marks Questions

1. Write the answers to the following questions with reference to the figure given below:



- i. Write the name of the opposite ray of ray RP
- ii. State the rays of which seg QR is a subset.

- Ans:**
- i. Ray RS and ray RT
 - ii. Ray QR, ray QS, ray QT, ray RQ

2. From the information given below, find which of the point is between the other two. If the points are not collinear, state so.

$$d(P, R) = 7, d(P, Q) = 10, d(Q, R) = 3$$

- Sol:** $d(P, Q) = 10$... (i)
 $d(P, R) + d(Q, R) = 7 + 3 = 10$... (ii)
 $\therefore d(P, Q) = d(P, R) + d(Q, R)$... [From (i) and (ii)]
 \therefore Point R is between the points P and Q i.e., P – R – Q.

3. From the information given below, find which of the point is between the other two. If the points are not collinear, state so.

$$d(D, E) = 5, d(E, F) = 8, d(D, F) = 6$$

- Sol:** $d(E, F) = 8$... (i)
 $d(D, E) + d(D, F) = 5 + 6 = 11$... (ii)
 $\therefore d(E, F) \neq d(D, E) + d(D, F)$... [From (i) and (ii)]
 \therefore The given points are not collinear.



4. On a number line, points A, B and C are such that $d(A, C) = 10$, $d(C, B) = 8$. Find $d(A, B)$ considering all possibilities.

Sol: **Case I:** Points A, B, C are such that, $A - B - C$.

$$\therefore d(A, C) = d(A, B) + d(B, C)$$

$$\therefore 10 = d(A, B) + 8$$

$$\therefore d(A, B) = 10 - 8$$

$$\therefore d(A, B) = 2$$

Case II: Points A, B, C are such that $A - C - B$.

$$\therefore d(A, B) = d(A, C) + d(C, B)$$

$$= 10 + 8$$

$$\therefore d(A, B) = 18$$

5. The following table shows points on a number line and their co-ordinates. Decide whether seg DE and seg AB are congruent or not.

Point	A	B	C	D	E
Co-ordinate	-3	5	2	-7	9

Sol: Since, $9 > -7$

$$\therefore l(DE) = 9 - (-7) = 9 + 7 = 16$$

$$\text{Since, } 5 > -3$$

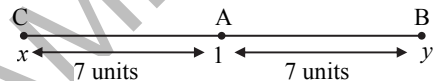
$$\therefore l(AB) = 5 - (-3) = 5 + 3 = 8$$

$$\therefore l(DE) \neq l(AB)$$

\therefore seg DE and seg AB are **not congruent**.

6. Co-ordinate of point A on a number line is 1. What are the co-ordinates of points on the number line which are at a distance of 7 units from A?

Sol: Suppose that points B and C are at a distance of 7 units from A.



Let the co-ordinate of C be x and that of B be y .

i. Since, point C is to the left of point A, $1 > x$

$$\therefore d(A, C) = 1 - x$$

$$\therefore 7 = 1 - x$$

$$\therefore x = -6$$

ii. Since, point A is to the left of point B, $y > 1$

$$\therefore d(A, B) = y - 1$$

$$\therefore 7 = y - 1$$

$$\therefore y = 8$$

\therefore The co-ordinates of the points are **-6 and 8**.



Practice Set

1. Answer the following questions with the help of figure given below.



- Write the intersection of ray DB and ray AD.
 - Write the union set of ray AC and ray BE.
2. From the information given below, find which of the point is between the other two. If the points are not collinear, state so.
 $d(P, Q) = 15$, $d(Q, R) = 7$, $d(P, R) = 8$.
3. Points X, Y and Z are collinear such that $d(X, Y) = 17$, $d(Y, Z) = 8$, find $d(X, Z)$.
4. The following table shows points on a number line and their co-ordinates. Decide whether seg NP and seg LR are congruent or not.

Point	L	M	N	P	Q	R
Co-ordinate	-5	0	8	-1	7	4

5. The co-ordinate of point B on the number line is -3 . Find the co-ordinates of the points which are at a distance of 6 units from B.

Answers

- seg AD
 - line EC
- Point R is between the points P and Q.
- 25 or 9
- Are congruent.
- -9 and 3



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