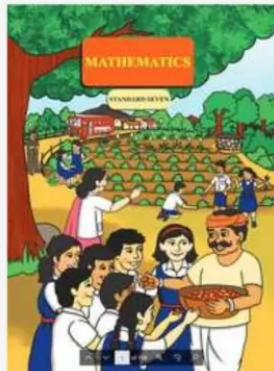


# Maharashtra Board Solutions Class 7-Maths

## (Practice Set 49): Chapter 13- Pythagoras Theorem

BOOK SOLUTIONS  
**CLASS 7**  
MATHS

CHAPTER 13  
**Pythagoras Theorem**



Maharashtra Board Solutions→



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# Maharashtra Board Solutions Class 7-Maths

## (Practice Set 49): Chapter 13- Pythagoras Theorem

Class 7: Maths Chapter 13 solutions. Complete Class 7 Maths Chapter 13 Notes.

### Maharashtra Board Solutions Class 7-Maths (Practice Set 49): Chapter 13- Pythagoras Theorem

Maharashtra Board 7th Maths Chapter 13, Class 7 Maths Chapter 13 solutions

#### Question 1.

Find the Pythagorean triplets from among the following sets of numbers:

- i. 3,4,5
- ii. 2,4,5
- iii. 4,5,6
- iv. 2,6,7
- v. 9,40,41
- vi. 4,7,8

#### Solution:

i.  $3^2 = 9, 4^2 = 16, 5^2 = 25$

Now,  $9 + 16 = 25$

$\therefore 3^2 + 4^2 = 5^2$

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∴ 3, 4 and 5 is a Pythagorean triplet.

ii.  $2^2 = 4$ ,  $4^2 = 16$ ,  $5^2 = 25$

But,  $4 + 16 \neq 25$

∴  $2^2 + 4^2 \neq 5^2$

∴ 2, 4 and 5 is not a Pythagorean triplet.

iii.  $4^2 = 16$ ,  $5^2 = 25$ ,  $6^2 = 36$

But  $16 + 25 \neq 36$

∴  $4^2 + 5^2 \neq 6^2$

∴ 4, 5 and 6 is not a Pythagorean triplet.

iv.  $2^2 = 4$ ,  $6^2 = 36$ ,  $7^2 = 49$

But,  $4 + 36 \neq 49$

∴  $2^2 + 6^2 \neq 7^2$

∴ 2, 6 and 7 is not a Pythagorean triplet.

v.  $9^2 = 81$ ,  $40^2 = 1600$ ,  $41^2 = 1681$

Now,  $81 + 1600 = 1681$

∴  $9^2 + 40^2 = 41^2$

∴ 9, 40 and 41 is a Pythagorean triplet.

vi.  $4^2 = 16$ ,  $7^2 = 49$ ,  $8^2 = 64$

But,  $16 + 49 \neq 64$

∴  $4^2 + 7^2 \neq 8^2$

∴ 4, 7 and 8 is not a Pythagorean triplet.

**Question 2.**

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The sides of some triangles are given below. Find out which ones are right-angled triangles?

i. 8,15,17

ii. 11,12,15

iii. 11,60,61

iv. 1.5, 1.6, 1.7

v. 40, 20, 30

**Solution:**

i.  $8^2 = 64$ ,  $15^2 = 225$ ,  $17^2 = 289$

Now,  $64 + 225 = 289$

$\therefore 8^2 + 15^2 = 17^2$

The above expression is of the form  $(\text{hypotenuse})^2 = (\text{base})^2 + (\text{height})^2$

$\therefore$  The sides of lengths 8,15,17 will form a right-angled triangle.

ii.  $11^2 = 121$ ,  $12^2 = 144$ ,  $15^2 = 225$

But,  $121 + 144 \neq 225$

$\therefore 11^2 + 12^2 \neq 15^2$

$\therefore$  The above expression is not of the form

$(\text{hypotenuse})^2 = (\text{base})^2 + (\text{height})^2$

$\therefore$  The sides of lengths 11, 12, 15 will not form a right-angled triangle.

iii.  $11^2 = 121$ ,  $60^2 = 3600$ ,  $61^2 = 3721$

Now,  $121 + 3600 = 3721$

$\therefore 11^2 + 60^2 = 61^2$

$\therefore$  The above expression is of the form

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$$(\text{hypotenuse})^2 = (\text{base})^2 + (\text{height})^2$$

∴ The sides of lengths 11, 60, 61 will form a right-angled triangle.

iv.  $1.5^2 = 2.25$ ,  $1.6^2 = 2.56$ ,  $1.7^2 = 2.89$

But,  $2.25 + 2.56 \neq 2.89$

∴  $1.5^2 + 1.6^2 \neq 1.7^2$

∴ The above expression is not of the form

$$(\text{hypotenuse})^2 = (\text{base})^2 + (\text{height})^2$$

∴ The sides of lengths 1.5, 1.6, 1.7 will not form a right-angled triangle.

v.  $40^2 = 1600$ ,  $20^2 = 400$ ,  $30^2 = 900$

But,  $400 + 900 \neq 1600$

∴  $20^2 + 30^2 \neq 40^2$

∴ The above expression is not of the form  $(\text{hypotenuse})^2 = (\text{base})^2 + (\text{height})^2$

∴ The sides of lengths 40, 20, 30 will not form a right-angled triangle.

### Intext Questions and Activities

#### Question 1.

From the numbers 1 to 50, pick out the Pythagorean triplets. (Textbook pg. no. 90)

**Solution:**

1. 3,4,5
2. 5,12,13
3. 7,24,25
4. 8,15,17
5. 9,40,41
6. 12,35,37
7. 20,21,29



# Maharashtra Board Solutions

## Class 7 Maths

- Chapter 1- Geometrical Constructions (Practice Set 1)
- Chapter 1- Geometrical Constructions (Practice Set 2)
- Chapter 1- Geometrical Constructions (Practice Set 3)
- Chapter 1- Geometrical Constructions (Practice Set 4)
- Chapter 1- Geometrical Constructions (Practice Set 5)
- Chapter 1- Geometrical Constructions (Practice Set 6)
- Chapter 1- Geometrical Constructions (Practice Set 7)
- Chapter 2- Multiplication and Division of Integers (Practice Set 8)
- Chapter 2- Multiplication and Division of Integers (Practice Set 9)
- Chapter 3- HCF and LCM (Practice Set 10)
- Chapter 3- HCF and LCM (Practice Set 11)
- Chapter 3- HCF and LCM (Practice Set 12)
- Chapter 3- HCF and LCM (Practice Set 13)
- Chapter 3- HCF and LCM (Practice Set 14)
- Chapter 4- Angles and Pairs of Angles (Practice Set 15)
- Chapter 4- Angles and Pairs of Angles (Practice Set 16)
- Chapter 4- Angles and Pairs of Angles (Practice Set 17)
- Chapter 4- Angles and Pairs of Angles (Practice Set 18)
- Chapter 4- Angles and Pairs of Angles (Practice Set 19)
- Chapter 4- Angles and Pairs of Angles (Practice Set 20)
- Chapter 4- Angles and Pairs of Angles (Practice Set 21)

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- Chapter 5- Operations on Rational Numbers (Practice Set 22)
- Chapter 5- Operations on Rational Numbers (Practice Set 23)
- Chapter 5- Operations on Rational Numbers (Practice Set 24)
- Chapter 5- Operations on Rational Numbers (Practice Set 25)
- Chapter 6- Indices (Practice Set 26)
- Chapter 6- Indices (Practice Set 27)
- Chapter 6- Indices (Practice Set 28)
- Chapter 6- Indices (Practice Set 29)
- Chapter 6- Indices (Practice Set 30)
- Chapter 7- Joint Bar Graph (Practice Set 31)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 32)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 33)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 34)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 35)
- Chapter 8- Algebraic Expressions and Operations on them (Practice Set 36)
- Chapter 9- Direct Proportion and Inverse Proportion (Practice Set 37)
- Chapter 9- Direct Proportion and Inverse Proportion (Practice Set 38)
- Chapter 9- Direct Proportion and Inverse Proportion (Practice Set 39)
- Chapter 10- Bank and Simple Interest (Practice Set 40)
- Chapter 10- Bank and Simple Interest (Practice Set 41)
- Chapter 11- Circle (Practice Set 42)

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- Chapter 11- Circle (Practice Set 43)
- Chapter 12- Perimeter and Area (Practice Set 44)
- Chapter 12- Perimeter and Area (Practice Set 45)
- Chapter 12- Perimeter and Area (Practice Set 46)
- Chapter 12- Perimeter and Area (Practice Set 47)
- Chapter 13- Pythagoras Theorem (Practice Set 48)
- Chapter 13- Pythagoras Theorem (Practice Set 49)
- Chapter 14- Algebraic Formulae - Expansion of Squares (Practice Set 50)
- Chapter 14- Algebraic Formulae - Expansion of Squares (Practice Set 51)
- Chapter 14- Algebraic Formulae - Expansion of Squares (Practice Set 52)
- Chapter 14- Algebraic Formulae - Expansion of Squares (Practice Set 53)
- Chapter 15- Statistics (Practice Set 54)
- Chapter 14- Statistics (Practice Set 55)

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## About About Maharashtra State Board (MSBSHSE)

The Maharashtra State Board of Secondary and Higher Secondary Education or MSBSHSE (Marathi: महाराष्ट्र राज्य माध्यमिक आणि उच्च माध्यमिक शिक्षण मंडळ), is an **autonomous and statutory body established in 1965**. The board was amended in the year 1977 under the provisions of the Maharashtra Act No. 41 of 1965.

The Maharashtra State Board of Secondary & Higher Secondary Education (MSBSHSE), Pune is an independent body of the Maharashtra Government. There are more than 1.4 million students that appear in the examination every year. The Maha State Board conducts the board examination twice a year. This board conducts the examination for SSC and HSC.

The Maharashtra government established the Maharashtra State Bureau of Textbook Production and Curriculum Research, also commonly referred to as Ebalbharati, in 1967 to take up the responsibility of providing quality textbooks to students from all classes studying under the Maharashtra State Board. MSBHSE prepares and updates the curriculum to provide holistic development for students. It is designed to tackle the difficulty in understanding the concepts with simple language with simple illustrations. Every year around 10 lakh students are enrolled in schools that are affiliated with the Maharashtra State Board.

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As of now, the MSCERT and Balbharti are responsible for the syllabus and textbooks of Classes 1 to 8, while Classes 9 and 10 are under the Maharashtra State Board of Secondary and Higher Secondary Education (MSBSHSE).

How many state boards are there in Maharashtra?

The Maharashtra State Board of Secondary & Higher Secondary Education, conducts the HSC and SSC Examinations in the state of Maharashtra through its nine Divisional Boards located at Pune, Mumbai, Aurangabad, Nasik, Kolhapur, Amravati, Latur, Nagpur and Ratnagiri.

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