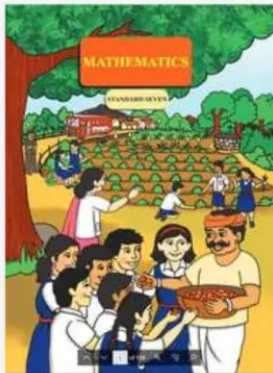


Maharashtra Board Solutions Class 7-Maths (Practice Set 21): Chapter 4- Angles and Pairs of Angles

BOOK SOLUTIONS
CLASS 7
MATHS

CHAPTER 4
Angles and Pairs of Angles

Maharashtra Board Solutions→



For any clarifications or questions you can write to info@indcareer.com

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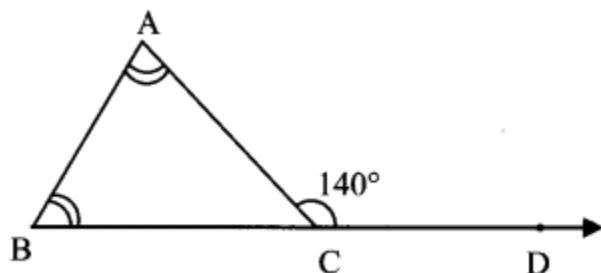
Class 7: Maths Chapter 4 solutions. Complete Class 7 Maths Chapter 4 Notes.

Maharashtra Board Solutions Class 7-Maths (Practice Set 21): Chapter 4- Angles and Pairs of Angles

Maharashtra Board 7th Maths Chapter 4, Class 7 Maths Chapter 4 solutions

Question 1.

$\angle ACD$ is an exterior angle of $\triangle ABC$. The measures of $\angle A$ and $\angle B$ are equal. If $m\angle ACD = 140^\circ$, find the measures of the angles $\angle A$ and $\angle B$.



Solution:

Let the measures of $\angle A$ be x° .

$$m\angle A = m\angle B = x^\circ$$

$\angle ACD$ is the exterior angle of $\triangle ABC$

$$\therefore m\angle ACD = m\angle A + m\angle B$$

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$$\therefore 140 = x + x$$

$$\therefore 140 = 2x$$

$$\therefore 2x = 140$$

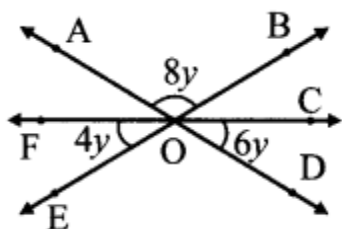
$$\therefore x = 140 \div 2$$

$$= 70$$

$\therefore$ The measures of the angles $\angle A$ and $\angle B$ is 70° each.

Question 2.

Using the measures of the angles given in the figure alongside, find the measures of the remaining three angles.



Solution:

$$m\angle EOD = m\angle AOB = 8y \dots (\text{vertically opposite angles})$$

$\angle FOL$, $\angle EOD$ and $\angle COD$ form a straight angle.

$$\therefore m\angle FOE + m\angle EOD + m\angle COD = 180^\circ$$

$$\therefore 4y + 8y + 6y = 180$$

$$\therefore 18y = 180$$

$$\therefore y = 180 \div 18$$

$$\therefore y = 10$$

$$m\angle EOD = 8y = 8 \times 10 = 80^\circ$$

$$m\angle AOF = m\angle COD \dots (\text{Vertically opposite angles})$$

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$$= 6y = 6 \times 10 = 60^\circ$$

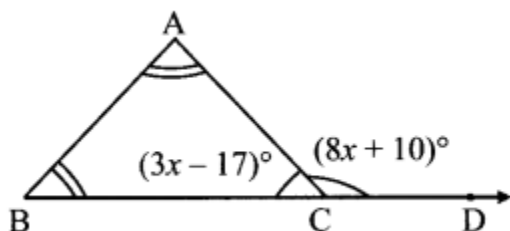
$$m\angle BOC = m\angle FOE \dots (\text{Vertically opposite angles})$$

$$= 4y = 4 \times 10 = 40^\circ$$

$\therefore$ The measures of $\angle EOD$, $\angle AOF$ and $\angle BOC$ are 80° , 60° and 40° respectively.

Question 3.

In the isosceles triangle ABC , $\angle A$ and $\angle B$ are equal. $\angle ACD$ is an exterior angle of $\triangle ABC$. The measures of $\angle ACB$ and $\angle ACD$ are $(3x - 17)^\circ$ and $(8x + 10)^\circ$ respectively. Find the measures of $\angle ACB$ and $\angle ACD$. Also find the measures of $\angle A$ and $\angle B$.



Solution:

Let the measure of $\angle A$ be y° . A

$$\therefore m\angle A = m\angle B = y^\circ$$

$\angle ACB$ and $\angle ACD$ form a pair of linear angles.

$$\therefore m\angle ACB + m\angle ACD = 180^\circ$$

$$\therefore (3x - 17) + (8x + 10) = 180$$

$$\therefore 3x + 8x - 17 + 10 = 180$$

$$\therefore 11x - 7 = 180$$

$$\therefore 11x - 7 + 7 = 180 + 7 \dots (\text{Adding 7 on both sides.})$$

$$\therefore 11x = 187$$

$$\therefore x = 187 \div 11 = 17$$

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$$m\angle ACB = 3x - 17 = (3 \times 17) - 17 = 51 - 17 = 34^\circ$$

$$m\angle ACD = 8x + 10 = 8 \times 17 + 10 = 136 + 10 = 146^\circ$$

Here $\angle ACD$ is the exterior angle of $\triangle ABC$ and $\angle A$ and $\angle B$ are its remote interior angles.

$$\therefore m\angle ACD = m\angle A + m\angle B$$

$$\therefore 146 = y + y$$

$$\therefore 146 = 2y$$

$$\therefore 2y = 146$$

$$\therefore y = 146 \div 2 = 73$$

$\therefore$ The measures of $\angle ACB$, $\angle ACD$, $\angle A$ and $\angle B$ are 34° , 146° , 73° and 73° respectively.

Intext Questions and Activities

Question 1.

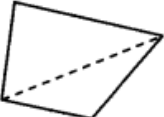
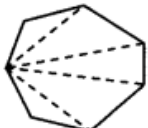
Use straws or sticks to make all the kinds of angles that you have learnt about. (Textbook pg. no. 29)

Solution:

(Student should attempt the activity on their own)

Question 2.

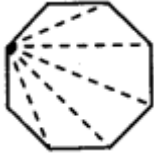
Observe the table given below and draw your conclusions (Textbook pg. no. 31)

Number of sides	Name of the polygon	Polygon	Number of triangles	Sum of interior angles
3	Triangle		1	$180^\circ \times 1 = $
4	Quadrilateral		2	$180^\circ \times 2 = $
5	Pentagon		3	$180^\circ \times 3 = $
6	Hexagon		4	$180^\circ \times $ $= $
7	Heptagon		5	
8	Octagon		6	
$\vdots$	$\vdots$	$\vdots$	$\vdots$	$\vdots$
n	A figure of n sides		$(n - 2)$	$180^\circ \times (n - 2)$

Solution:

- i. 180°
- ii. 360°
- iii. 540°
- iv. 720°
- v. $180^\circ \times 5 = 900^\circ$

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vi. , $180^\circ \times 6 = 1080^\circ$



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- 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)
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- 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)
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- Chapter 5- Operations on Rational Numbers (Practice Set 24)
- Chapter 5- Operations on Rational Numbers (Practice Set 25)
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- 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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