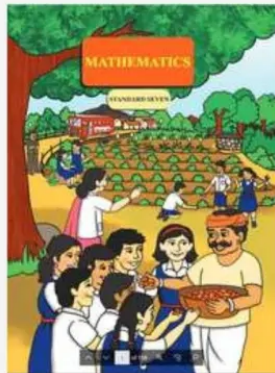


Maharashtra Board Solutions Class 7-Maths (Practice Set 17): Chapter 4- Angles and Pairs of Angles

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 17): Chapter 4- Angles and Pairs of Angles

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

Question 1.

Write the measures of the supplements of the angles given below:

- i. 15°
- ii. 85°
- iii. 120°
- iv. 37°
- v. 108°
- vi. 0°
- vii. a°

Solution:

- i. Let the measure of the supplementary angle be x° .

$$\therefore 15 + x = 180$$

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$$\therefore 15 + x - 15 = 180 - 15$$

....(Subtracting 15 from both sides)

$$\therefore x = 165$$

$\therefore$ The measures of the supplement of an angle of 15° is 165° .

ii. Let the measure of the supplementary angle be x° .

$$\therefore 85 + x = 180$$

$$\therefore 85 + x - 85 = 180 - 85$$

....(Subtracting 85 from both sides)

$$\therefore x = 95$$

$\therefore$ The measures of the supplement of an angle of 85° is 95° .

iii. Let the measure of the supplementary angle be x° .

$$\therefore 120 + x = 180$$

$$\therefore 120 + x - 120 = 180 - 120$$

....(Subtracting 120 from both sides)

$$\therefore x = 60$$

$\therefore$ The measures of the supplement of an angle of 120° is 60° .

iv. Let the measure of the supplementary angle be x° .

$$\therefore 37 + x = 180$$

$$\therefore 37 + x - 37 = 180 - 37$$

....(Subtracting 37 from both sides)

$$\therefore x = 143$$

$\therefore$ The measures of the supplement of an angle of 37° is 143° .

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v. Let the measure of the supplementary angle be x° .

$$\therefore 108 + x = 180$$

$$\therefore 108 + x - 108 = 180 - 108$$

....(Subtracting 108 from both sides)

$$\therefore x = 72$$

$\therefore$ The measures of the supplement of an angle of 108° is 72° .

vi. Let the measure of the supplementary angle be x° .

$$\therefore 0 + x = 180$$

$$\therefore x = 180$$

$\therefore$ The measures of the supplement of an angle of 0° is 180° .

vii. Let the measure of the supplementary angle be x° .

$$\therefore a + x = 180$$

$$\therefore a + x - a = 180 - a$$

....(Subtracting a from both sides) $x = (180 - a)$

$\therefore$ The measures of the supplement of an angle of a° is $(180 - a)^\circ$.

Question 2.

The measures of some angles are given below. Use them to make pairs of complementary and supplementary angles.

$$m\angle B = 60^\circ$$

$$m\angle N = 30^\circ$$

$$m\angle Y = 90^\circ$$

$$m\angle J = 150^\circ$$

$$m\angle D = 75^\circ$$

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$$m\angle E = 0^\circ$$

$$m\angle F = 15^\circ$$

$$m\angle G = 120^\circ$$

Solution:

$$\text{i. } m\angle B + m\angle N = 60^\circ + 30^\circ$$

$$= 90^\circ$$

$\therefore \angle B$ and $\angle N$ are a pair of complementary angles.

$$\text{ii. } m\angle Y + m\angle E = 90^\circ + 0^\circ$$

$$= 90^\circ$$

$\therefore \angle Y$ and $\angle E$ are a pair of complementary angles.

$$\text{iii. } m\angle D + m\angle F = 75^\circ + 15^\circ$$

$$= 90^\circ$$

$\therefore \angle D$ and $\angle F$ are a pair of complementary angles.

$$\text{iv. } m\angle B + m\angle G = 60^\circ + 120^\circ$$

$$= 180^\circ$$

$\therefore \angle B$ and $\angle G$ are a pair of supplementary angles.

$$\text{v. } m\angle N + m\angle J = 30^\circ + 150^\circ$$

$$= 180^\circ$$

$\therefore \angle N$ and $\angle J$ are a pair of supplementary angles.

Question 3.

In $\triangle XYZ$, $m\angle Y = 90^\circ$. What kind of a pair do $\angle X$ and $\angle Z$ make?

Solution:

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In $\triangle XYZ$,

$m\angle X + m\angle Y + m\angle Z = 180^\circ$ (Sum of the measure of the angles of a triangle is 180°)

$$\therefore m\angle X + 90 + m\angle Z = 180$$

$$\therefore m\angle X + 90 + m\angle Z - 90 = 180 - 90 \text{(Subtracting 90 from both sides)}$$

$$\therefore m\angle X + m\angle Z = 90^\circ$$

$\therefore \angle X$ and $\angle Z$ make a pair of complementary angles.

Question 4.

The difference between the measures of the two angles of a complementary pair is 40° . Find the measures of the two angles.

Solution:

Let the measure of one angle be x° .

$$\therefore \text{Measure of other angle} = (x + 40)^\circ$$

$$x + (x + 40) = 90 \text{ ... (Since, the two angles are complementary)}$$

$$\therefore 2x + 40 - 40 = 90 - 40 \text{(Subtracting 40 from both sides)}$$

$$\therefore 2x = 50$$

$$\therefore x = 50/2$$

$$\therefore x = 25$$

$$\therefore x + 40 = 25 + 40$$

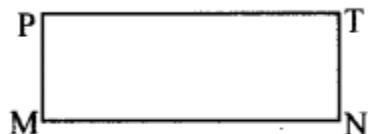
$$= 65$$

$\therefore$ The measures of the two angles is 25° and 65° .

Question 5.

□PTNM is a rectangle. Write the names of the pairs of supplementary angles.

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**Solution:**

Since, each angle of the rectangle is 90° .

$\therefore$ Pairs of supplementary angles are:

- i. $\angle P$ and $\angle M$
- ii. $\angle P$ and $\angle N$
- iii. $\angle P$ and $\angle T$
- iv. $\angle M$ and $\angle N$
- v. $\angle M$ and $\angle T$
- vi. $\angle N$ and $\angle T$

Question 6.

If $m\angle A = 70^\circ$, what is the measure of the supplement of the complement of $\angle A$?

Solution:

Let the measure of the complement of $\angle A$ be x° and the measure of its supplementary angle be y° .

$$m\angle A + x = 90^\circ$$

$$\therefore 70 + x = 90$$

$$\therefore 70 + x - 70 = 90 - 70 \dots (\text{Subtracting } 70 \text{ from both sides})$$

$$\therefore x = 20$$

Since, x and y are supplementary angles.

$$\therefore x + y = 180$$

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$$\therefore 20 + y = 180$$

$$\therefore 20 + y - 20 = 180 - 20 \dots (\text{Subtracting 20 from both sides})$$

$$\therefore y = 160$$

$\therefore$ The measure of supplement of the complement of $\angle A$ is 160° .

Question 7.

If $\angle A$ and $\angle B$ are supplementary angles and $m\angle B = (x + 20)^\circ$, then what would be $m\angle A$?

Solution:

Since, $\angle A$ and $\angle B$ are supplementary angles.

$$\therefore m\angle A + m\angle B = 180$$

$$\therefore m\angle A + x + 20 = 180$$

$$\therefore m\angle A + x + 20 - 20 = 180 - 20 \dots (\text{Subtracting 20 from both sides})$$

$$\therefore m\angle A + x = 160$$

$$\therefore m\angle A + x - x = 160 - x \dots (\text{Subtracting } x \text{ from both sides})$$

$$\therefore m\angle A = (160 - x)^\circ$$

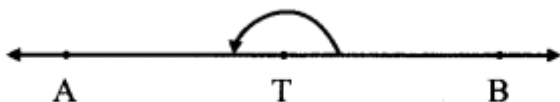
$\therefore$ The measure of $\angle A$ is $(160 - x)^\circ$.

Intext Questions and Activities

Question 1.

Observe the figure and answer the following questions. (Textbook pg. no. 26)

T is a point on line AB.



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1. What kind of angle is $\angle ATB$?
2. What is its measure?

Solution:

1. Straight angle
2. 180°



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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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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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