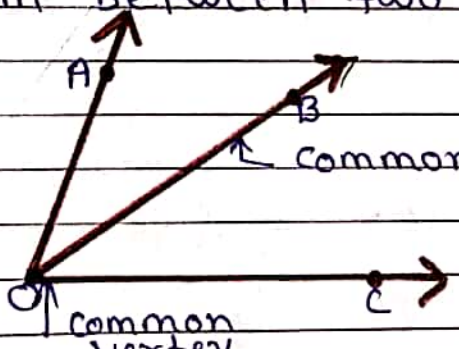
B. B. S. S Sec. School
Class- VII th Sub- Maths
Ch- 6 Understanding Shapes

Pairs Of Angles → A combination of two angles is called a pair of angles. There are five types of pairs of angles.

(i) Adjacent angles (ii) Linear pair angles
(iii) Complementary angles (iv) Supplementary angles
(v) Vertically opposite angles

1. Adjacent Angles → Two angles are said to be adjacent if they have a common vertex and a common arm between two other arms.



∠AOB and ∠AOC are adjacent angles because they have common arm 'OB' and common vertex 'O'.

2. Linear Pair → A pair of adjacent angles is said to form a linear pair, if their non-common arms lie on one line.

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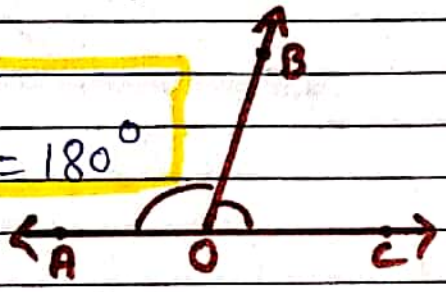
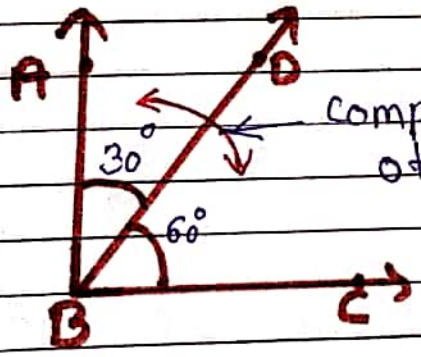
The sum of the measures of a linear pair angles is always 180°. Linear pair angles are always adjacent.

$\angle AOB + \angle BOC = 180^\circ$



3. Complementary Angles → Two angles are said to be complementary, if the sum of their degree measures is 90°

Complement angle = 90° − Given angle



complementary to each other.

4. Supplementary Angles :- Two angles are said to be supplementary, if the sum of their degree measures is 180°

Supplement angle = 180° − Given angle

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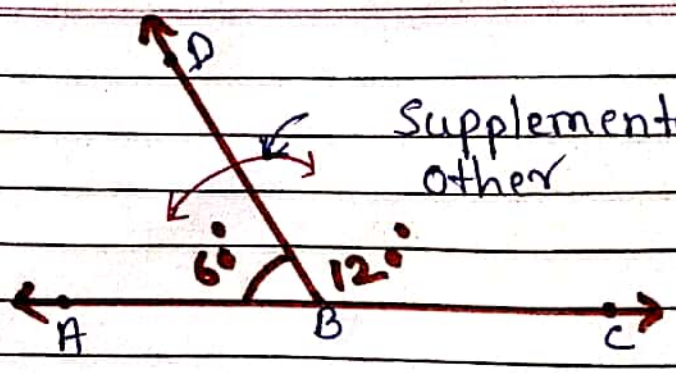
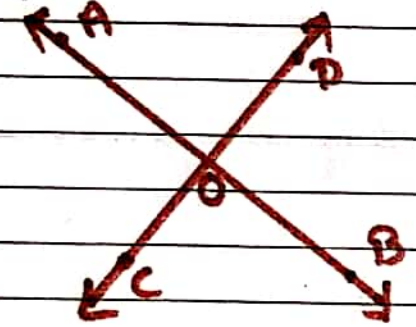


Supplementary to each other

5. Vertically Opposite Angles → The angles opposite to the common vertex formed by the intersection of two lines having no common arm are known as vertically opposite angles.



$\angle AOD$ and $\angle COB$ ~~and~~
$\angle AOC$ and $\angle DOB$ are vertically opposite angles.

Note → I. Write all definitions or notes in your note book.

II. Do assignment 6.1 in your note book.

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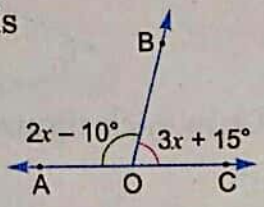
ASSIGNMENT 6.1

1. Multiple Choice Questions (MCQ) Choose the correct option.

(*i*) The common end-point where two rays meet to form an angle is called
(*a*) vertex (*b*) arm (*c*) ray (*d*) segment

(*ii*) The supplement of 1° is
(*a*) 89° (*b*) 179° (*c*) 169° (*d*) 201°

(*iii*) In the Fig. given at right, the value of x is
(*a*) 70° (*b*) 25°
(*c*) 80° (*d*) 35°



(*iv*) An angle is of 75°. Its complement is
(*a*) 25° (*b*) 105° (*c*) 75° (*d*) 15°

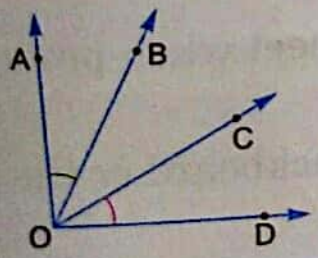
(*v*) One of the angles of a linear pair is 72°. The other angle is
(*a*) 72° (*b*) 108° (*c*) 144° (*d*) 18°

2. Which of the following statements is/are 'True' or 'False' ?

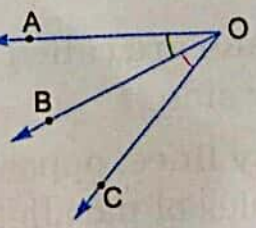
(*i*) The sum of two angles which form a linear pair is always equal to 180
(*ii*) The complement of 90° is 90°.
(*iii*) The supplement of an acute angle is always an obtuse angle.
(*iv*) The supplement of a right angle is also a right angle.
(*v*) The sum of two adjacent angles is supplementary.

3. Check whether the following indicated pairs of angles are adjacent :

(*i*)



(*ii*)



(4)

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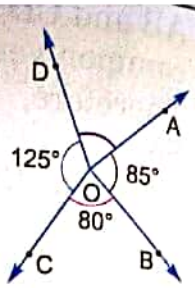
4. From the given figure, answer the following questions :



(*i*) Do $\angle AOB$ and $\angle BOC$ form a linear pair ?

(*ii*) Are $\angle AOB$ and $\angle COD$ vertically opposite angles ?

(*iii*) Do $\angle AOD$ and $\angle DOC$ form a linear pair ?

5. Write the complement of each of the following angles :

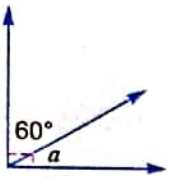
(*i*) 43° (*ii*) 46° (*iii*) 90° (*iv*) 72° (*v*) 29°

6. Write the supplement of each of the following angles :

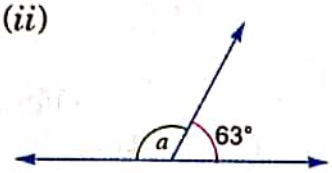
(*i*) 109° (*ii*) 121° (*iii*) 143° (*iv*) 92° (*v*) 180°

7. Find the value of a in each of the following :

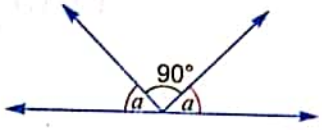
(*i*)



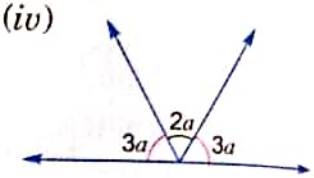
(*ii*)



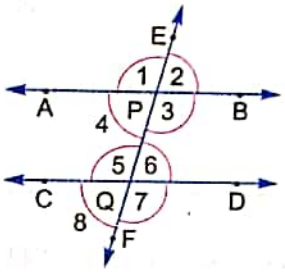
(*iii*)



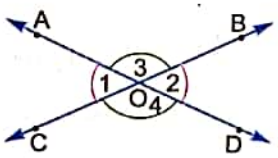
(*iv*)



8. In the given figure, name the pairs of vertically opposite angles.

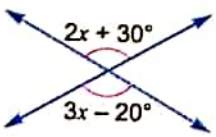


9. In the following figure, find the measure of other angles, if $\angle 1 = 50°$.

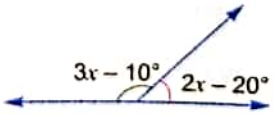


10. Find the value of x in each figure :

(*i*)



(*ii*)



11. Find the magnitude of an angle, which is

(*i*) $\frac{2}{3}$ of its supplement. (*ii*) $\frac{1}{4}$ of its complement.

12. An angle is equal to its complement. Find its measure.

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