MATHEMATICS

Class-7th

Chapter-5

Lines and Angles

Solution of Exercise-5.1

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Q.1. Find the complement of each of the following angles:

Sol. We know that the sum of complementary angles is $90°$. Therefore,

(i) Complement of $20° = 90° - 20° = 70°$.

(ii) Complement of $63° = 90° - 63° = 27°$.

(iii) Complement of $57° = 90° - 57° = 33°$.

Q.2. Find the supplement of each of the following angles:

Sol.
(i) Supplement of $105° = 180° - 105° = 75°$.

(ii) Supplement of $87° = 180° - 87° = 93°$

(iii) Supplement of $154° = 180° - 154° = 26°$

Q.3. Identify the pair of complementary angles:

Sol. (i) $63°, 27° = (63 + 27)° = 90°$.

(ii) $45°, 45° = (45 + 45)° = 90°$.

(iii) $80°, 10° = (80 + 10)° = 90°$.

Q.4. Find the angle which is equal to its complement.

Sol. Let the angle be $x°$

Therefore, its complement $= 90°-x°$

Since the angle is equal to its complement.

$\therefore \quad x° = 90° - x°$

$\Rightarrow x° + x° = 90°$

$\Rightarrow 2x° = 90°$

$\Rightarrow x° = \dfrac{90°}{2} = 45°$

Hence, the required angle $= 45°$. **Ans**

Q.5. **Sol** To find equal angle to its supp.

Let the angle be $x°$

Therefore, its supplement $= 180° - x°$

Since the angle is equal to its supplement.

$\therefore \quad x° = 180° - x°$

$\Rightarrow x° + x° = 180°$

$\Rightarrow 2x° = 180°$

$\Rightarrow x° = \dfrac{\overset{90}{\cancel{180}}°}{\cancel{2}} = 90°$

Therefore, the required angle

$= 90°$ **Ans**

Q.9. The given figure is :-

Sol.

(i) <u>yes</u>, $\angle 1$ is adjacent to $\angle 2$.
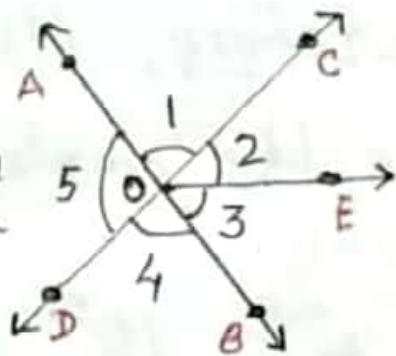
(ii) <u>No</u>, $\angle AOC$ is not adjacent to $\angle AOE$ because they have <u>common interior point C</u>.

(iii) <u>No</u>, $\angle COE$ And $\angle COD$ don't form a linear pair.

(iv) <u>yes</u>, $\angle BOD$ And $\angle DOA$ are supplementary because they <u>form a straight angle</u>

(v) <u>yes</u>, $\angle 1$ is <u>vertically opposite to $\angle 4$.</u>

(vi) $\angle BOC$ is the <u>vertically opp. of $\angle 5$.</u>

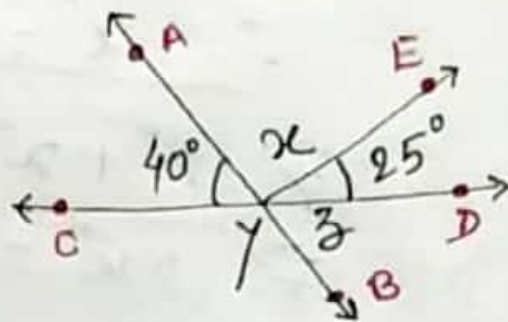**Q.12.** Find the value of x, y and z.

Sol.

$\angle y + 40° = 180°$ (L.P)

$\Rightarrow \underline{\angle y = (180-40)° = 140°}$

$\angle 3 = 40°$ (V.O.A)

$\angle x + 25 + 40 = 180°$ (L.P)

$\therefore$ $\underline{\angle x = 115°}$. Ans.

Q.14 Name the following pairs of angles:

Sol.
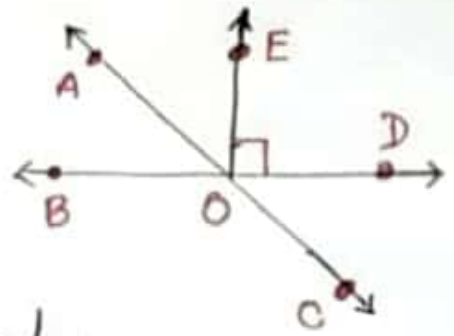
(i) A pair of obtuse vertically opposite angles are ∠AOD And ∠BOC.

(ii) Adjacent complementary angles are ∠AOB and ∠AOE.

(iii) Equal supplementary angles are ∠BOE and ∠EOD

(iv) Unequal supplementary angles are ∠EOA and ∠EOC.

(v) Adjacent angles that do not form a linear pair are
∠AOB and ∠AOE.
∠AOE and ∠EOD.
∠EOD and ∠COD.

The End.