Exercise 4B

Question 5:

AOB will be a straight line, if two adjacent angles form a linear pair.

$\therefore \angle BOC + \angle AOC = 180^\circ$

$\Rightarrow (4x - 36)^\circ + (3x + 20)^\circ = 180^\circ$

$\Rightarrow 4x - 36 + 3x + 20 = 180$

$\Rightarrow 7x - 16 = 180^\circ$

$\Rightarrow 7x = 180 + 16 = 196$

$\Rightarrow x = 196/7 = 28$

$\therefore$ The value of $x = 28$.

Question 6:

Since $\angle AOC$ and $\angle AOD$ form a linear pair.

$\therefore \angle AOC + \angle AOD = 180^\circ$

$\Rightarrow 50^\circ + \angle AOD = 180^\circ$

$\Rightarrow \angle AOD = 180^\circ - 50^\circ = 130^\circ$

$\angle AOD$ and $\angle BOC$ are vertically opposite angles.

$\angle AOD = \angle BOC$

$\Rightarrow \angle BOC = 130^\circ$

$\angle BOD$ and $\angle AOC$ are vertically opposite angles.

$\therefore \angle BOD = \angle AOC$

$\Rightarrow \angle BOD = 50^\circ$

Question 7:

Since $\angle COE$ and $\angle DOF$ are vertically opposite angles, we have,

$\angle COE = \angle DOF$

$\Rightarrow \angle z = 50^\circ$

Also $\angle BOD$ and $\angle COA$ are vertically opposite angles.

So, $\angle BOD = \angle COA$

$\Rightarrow \angle t = 90^\circ$

As $\angle COA$ and $\angle AOD$ form a linear pair,

$\angle COA + \angle AOD = 180^\circ$

$\Rightarrow \angle COA + \angle AOF + \angle FOD = 180^\circ$ [$\angle t = 90^\circ$]

$\Rightarrow t + x + 50^\circ = 180^\circ$

$\Rightarrow 90^\circ + x^\circ + 50^\circ = 180^\circ$

$\Rightarrow x + 140 = 180$

$\Rightarrow x = 180 - 140 = 40$

Since $\angle EOB$ and $\angle AOF$ are vertically opposite angles

So, $\angle EOB = \angle AOF$

$\Rightarrow y = x = 40$

Thus, $x = 40 = y = 40$, $z = 50$ and $t = 90$

*********** END **********