Exercise 4B

Question 5:
AOB will be a straight line, if two adjacent angles form a linear pair.
$\therefore \angle BOC + \angle AOC = 180^o$
$\Rightarrow (4x - 36)^o + (3x + 20)^o = 180^o$
$\Rightarrow 4x - 36 + 3x + 20 = 180$
$\Rightarrow 7x - 16 = 180^o$
$\Rightarrow 7x = 180 + 16 = 196$
$\Rightarrow x = 196/7 = 28$
$\therefore$ The value of x = 28.

Question 6:
Since $\angle AOC$ and $\angle AOD$ form a linear pair.
$\therefore \angle AOC + \angle AOD = 180^o$
$\Rightarrow 50^o + \angle AOD = 180^o$
$\Rightarrow \angle AOD = 180^o - 50^o = 130^o$
$\angle AOD$ and $\angle BOC$ are vertically opposite angles.
$\angle AOD = \angle BOC$
$\Rightarrow \angle BOC = 130^o$
$\angle BOD$ and $\angle AOC$ are vertically opposite angles.
$\therefore \angle BOD = \angle AOC$
$\Rightarrow \angle BOD = 50^o$

Question 7:
Since $\angle COE$ and $\angle DOF$ are vertically opposite angles, we have,
$\angle COE = \angle DOF$
$\Rightarrow \angle z = 50^o$
Also $\angle BOD$ and $\angle COA$ are vertically opposite angles.
So, $\angle BOD = \angle COA$
$\Rightarrow \angle t = 90^o$
As $\angle COA$ and $\angle AOD$ form a linear pair,
$\angle COA + \angle AOD = 180^o$
$\Rightarrow \angle COA + \angle AOF + \angle FOD = 180^o$ [$\angle t = 90^o$]
$\Rightarrow t + x + 50^o = 180^o$
$\Rightarrow 90^o + x^o + 50^o = 180^o$
$\Rightarrow x + 140 = 180$
$\Rightarrow x = 180 - 140 = 40$
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 **********