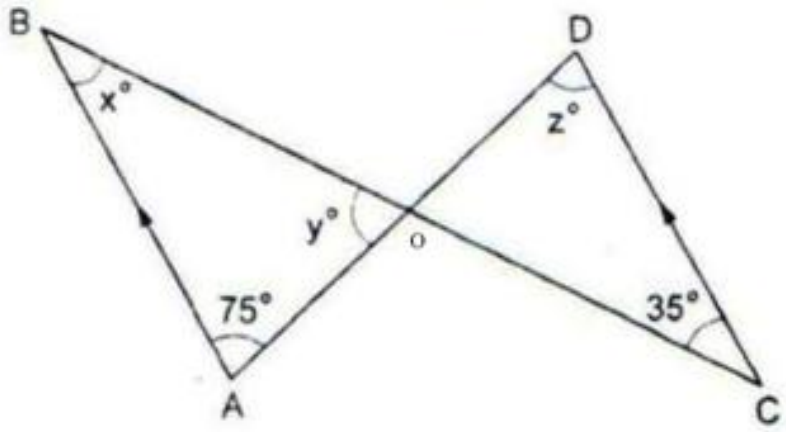
Exercise 4C

Question 11:
Since AB || CD and AC is a transversal.
So, $\angle BAC + \angle ACD = 180^o$ [sum of consecutive interior angles is 180^o]
$\Rightarrow \angle ACD = 180^o - \angle BAC$
$= 180^o - 75^o = 105^o$
$\Rightarrow \angle ECF = \angle ACD$ [Vertically opposite angles]
$\angle ECF = 105^o$
Now in ΔCEF,
$\angle ECF + \angle CEF + \angle EFC = 180^o$
$\Rightarrow 105^o + x^o + 30^o = 180^o$
$\Rightarrow x = 180 - 30 - 105 = 45$

Hence, x = 45.

Question 12:
Since AB || CD and PQ a transversal.
So, $\angle PEF = \angle EGH$ [Corresponding angles]
$\Rightarrow \angle EGH = 85^o$
$\angle EGH$ and $\angle QGH$ form a linear pair.
So, $\angle EGH + \angle QGH = 180^o$
$\Rightarrow \angle QGH = 180^o - 85^o = 95^o$
Similarly, $\angle GHQ + 115^o = 180^o$
$\Rightarrow \angle GHQ = 180^o - 115^o = 65^o$
In ΔGHQ, we have,
$x^o + 65^o + 95^o = 180^o$
$\Rightarrow x = 180 - 65 - 95 = 180 - 160$
$\therefore x = 20$

Question 13:



Since AB || CD and BC is a transversal.
So, $\angle ABC = \angle BCD$
$\Rightarrow x = 35$
Also, AB || CD and AD is a transversal.
So, $\angle BAD = \angle ADC$
$\Rightarrow z = 75$
In ΔABO, we have,
$\angle AOB + \angle BAO + \angle BOA = 180^o$

$\Rightarrow x^{o} + 75^{o} + y^{o} = 180^{o}$
$\Rightarrow 35 + 75 + y = 180$
$\Rightarrow y = 180 - 110 = 70$
$\therefore x = 35, y = 70$ and $z = 75$.

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