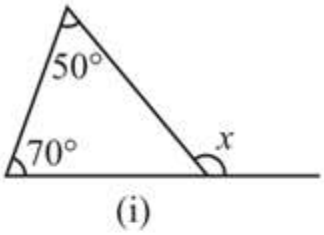
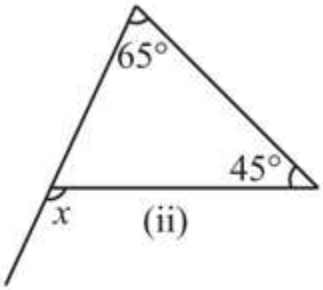
Triangle and Its Properties: Exercise 6.2

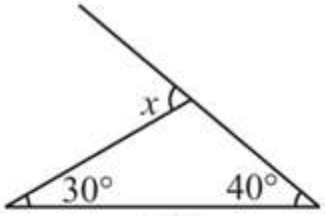
Q.1 Find the value of the unknown exterior angle x in the following diagrams:



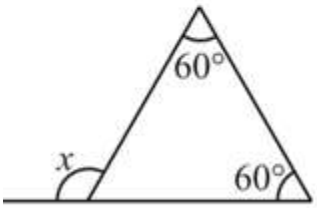
(i)



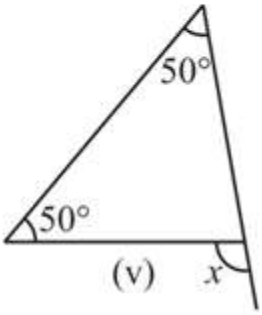
(ii)



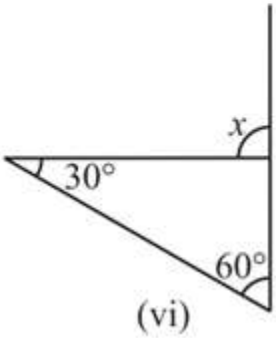
(iii)



(iv)



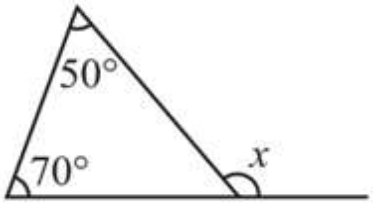
(v)



(vi)

Sol: Since, an exterior angle of a triangle is equal to the sum of its interior opposite angles.

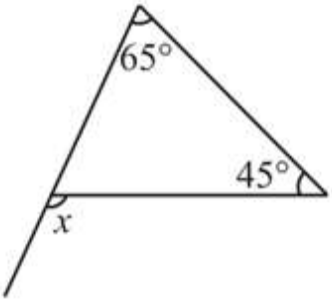
(i) Given figure:



$x = 50^o + 70^o$

Thus, $x = 120^o$

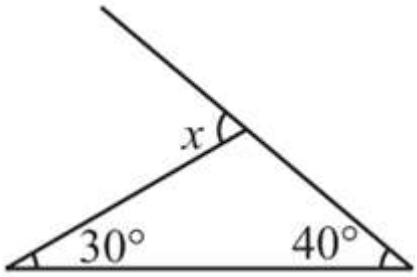
(ii) Given figure:



$x = 65^o + 45^o$

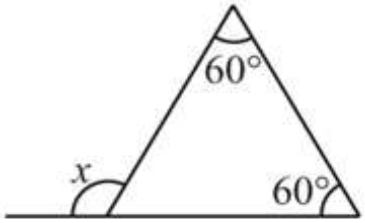
Thus, $x = 110^o$

(iii) Given figure:



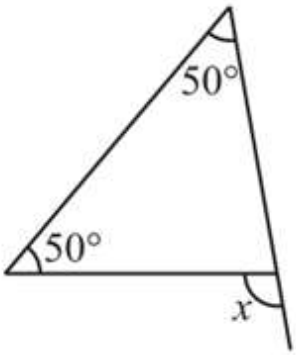
$x = 30^o + 40^o$
Thus, $x = 70^o$

(iv) Given figure:



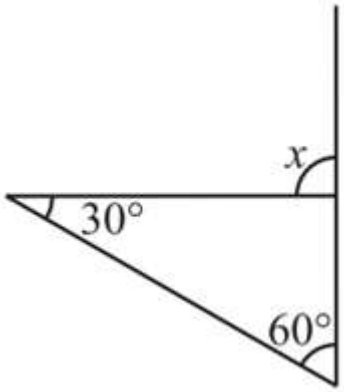
$x = 60^o + 60^o$
Thus, $x = 120^o$

(v) Given Figure:



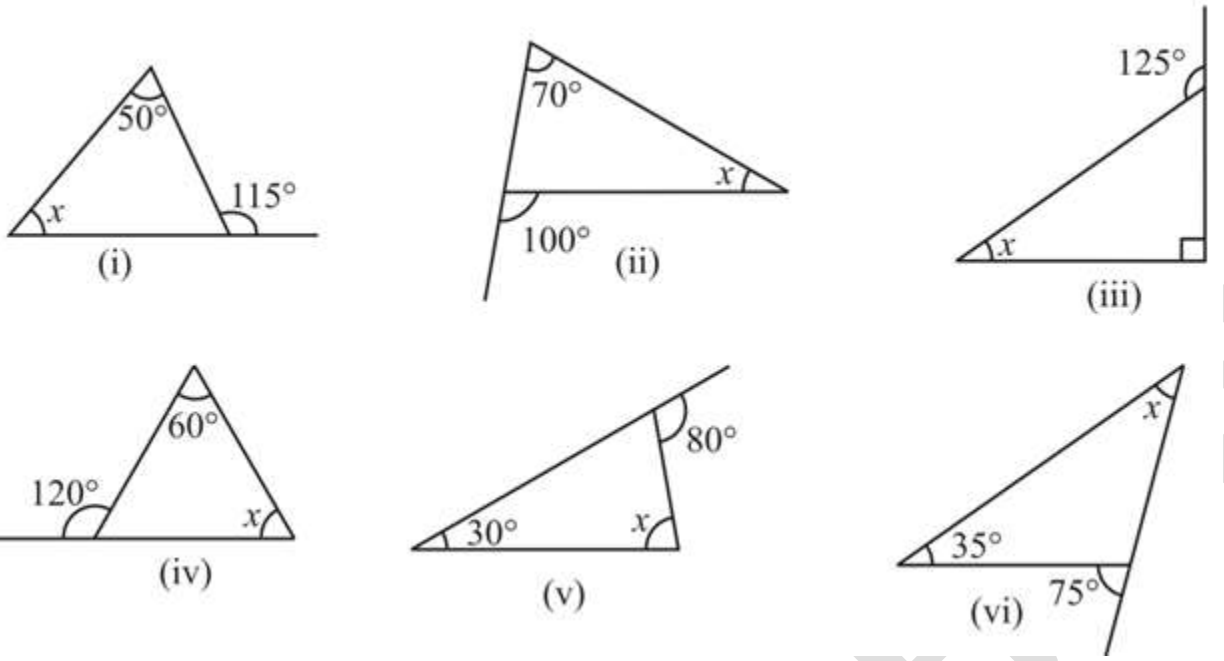
$x = 50^o + 50^o$
Thus, $x = 110^o$

(vi) Given figure:



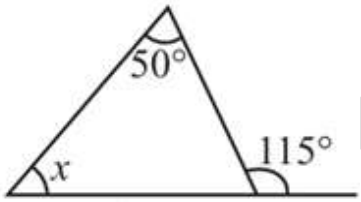
$x = 30^o + 60^o$
Thus, $x = 90^o$

Q.2 Find the value of the unknown interior angle x in the following figures:



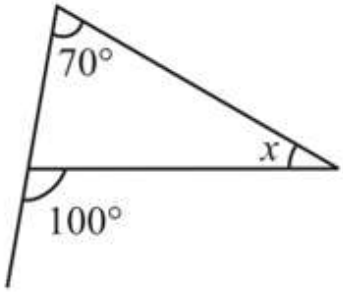
Sol: Since, an exterior angle of a triangle is equal to the sum of its interior opposite angles.

(i) Given figure:



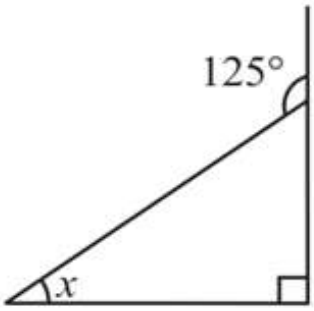
$x + 50^o = 115^o$
On transposing 50^o from LHS to RHS,
$x = 115^o - 50^o$
Thus, $x = 65^o$

(ii) Given figure:



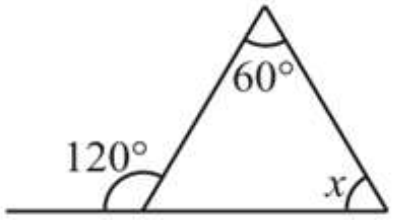
$x + 70^o = 100^o$
On transposing 70^o from LHS to RHS,
$x = 100^o - 70^o$
Thus, $x = 30^o$

(iii) Given figure:



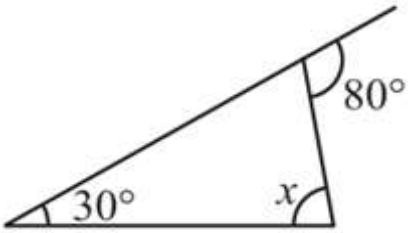
Since, given triangle is a right angled triangle.
$x + 90^o = 125^o$
On transposing 90^o from LHS to RHS,
$x = 125^o - 90^o$
Thus, $x = 35^o$

(iv) Given figure:



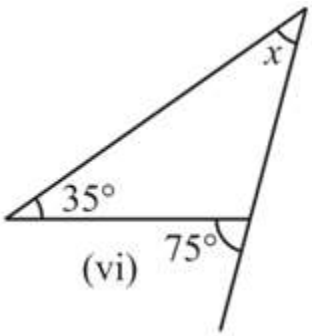
$x + 60^o = 120^o$
On transposing 60^o from LHS to RHS,
$x = 120^o - 60^o$
Thus, $x = 60^o$

(v) Given figure:



$x + 30^o = 80^o$
On transposing 30^o from LHS to RHS,
$x = 80^o - 30^o$
Thus, $x = 50^o$

(vi) Given figure:



$x + 35^o = 75^o$
On transposing 35^o from LHS to RHS,
$x = 75^o - 35^o$
Thus, $x = 40^o$