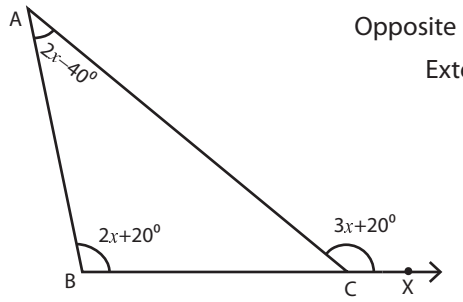
Name : _____ Score : _____

Triangle - Exterior Angle

The measure of an exterior angle of a triangle is equal to sum of the measures of opposite interior angles.



Exterior angle : ∠ACX

Opposite interior angles : ∠A and ∠B

Exterior angle = Sum of opposite interior angles

$\angle ACX = \angle A + \angle B$

$3x+20^0 = 2x-40^0+2x+20^0$

$x+20^0 = 4x-20^0$

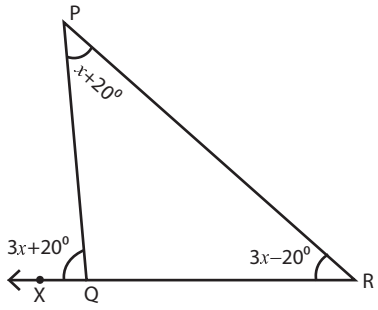
$4x - 3x = 20^0+20^0$

$x = \mathbf{40^0}$

$\angle ACX = 3 \times 40^0 + 20^0 = \mathbf{140^0}$

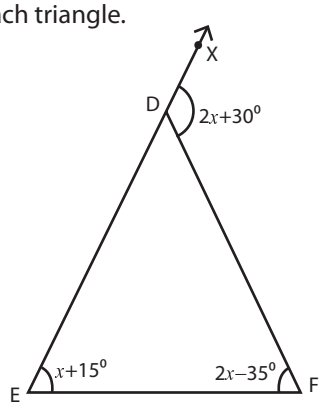
Find the value of x and unknown exterior angle for each triangle.

1)



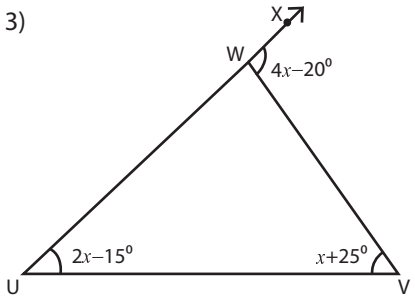
$x =$ _____ ; $\angle PQX =$ _____

2)



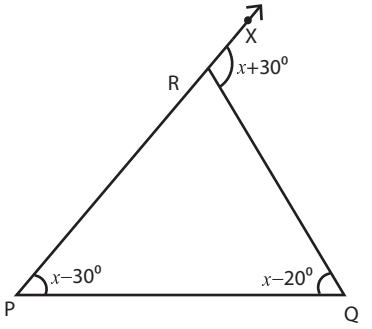
$x =$ _____ ; $\angle FDX =$ _____

3)



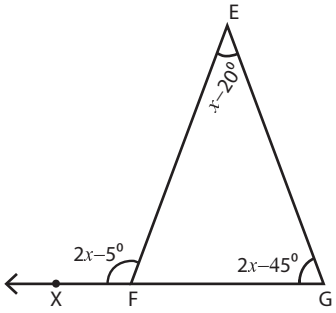
$x =$ _____ ; $\angle VWX =$ _____

4)



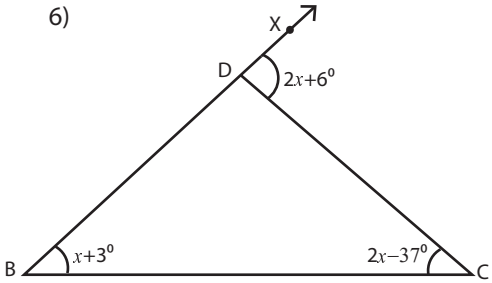
$x =$ _____ ; $\angle QRX =$ _____

5)



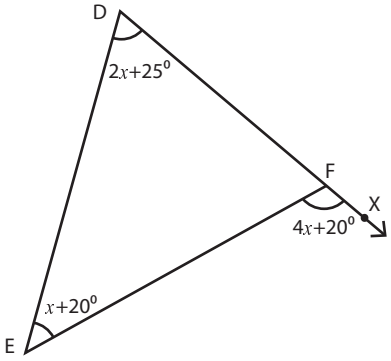
$x =$ _____ ; $\angle EFX =$ _____

6)



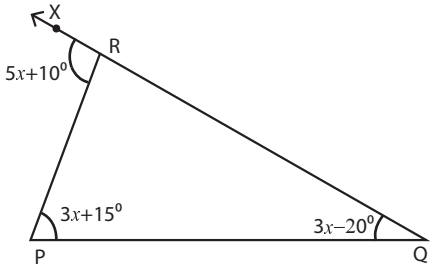
$x =$ _____ ; $\angle CDX =$ _____

7)



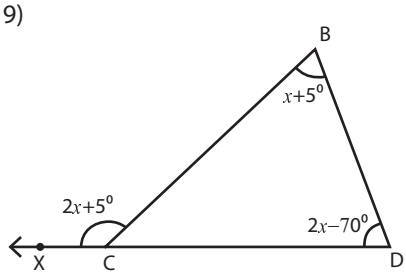
$x =$ _____ ; $\angle EFX =$ _____

8)



$x =$ _____ ; $\angle PRX =$ _____

9)

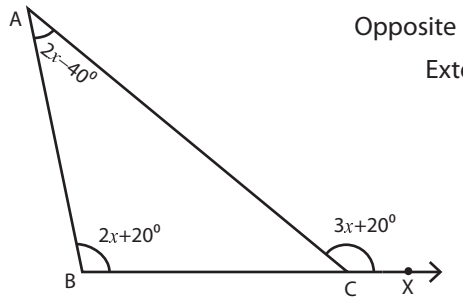


$x =$ _____ ; $\angle BCX =$ _____

Name : _____ Score : _____

Answer key

The measure of an exterior angle of a triangle is equal to sum of the measures of opposite interior angles.



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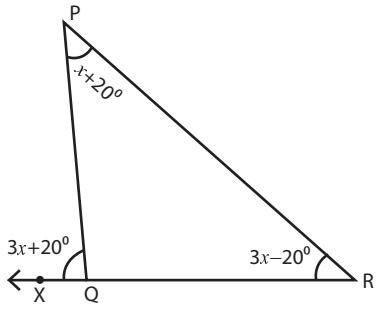
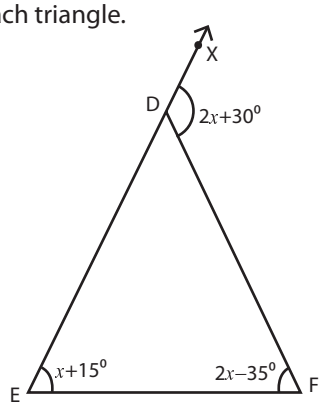
Find the value of x and unknown exterior angle for each triangle.

1)



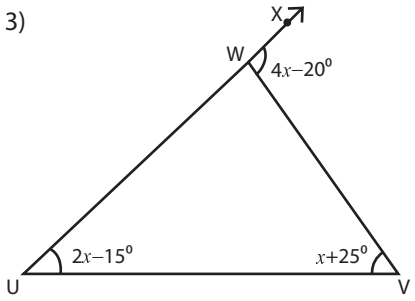
$x =$ **20°** ; $\angle PQX =$ **80°**

2)



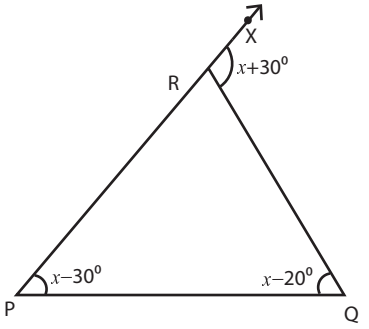
$x =$ **50°** ; $\angle FDX =$ **130°**

3)



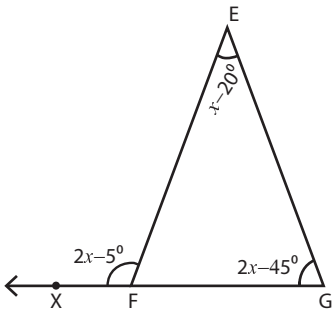
$x =$ **30°** ; $\angle VWX =$ **100°**

4)



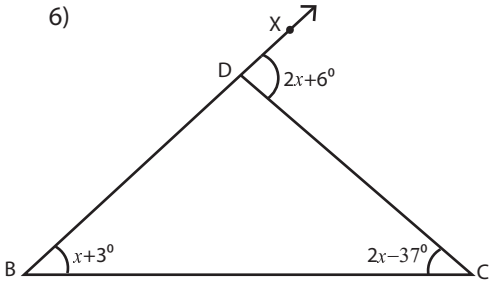
$x =$ **80°** ; $\angle QRX =$ **110°**

5)



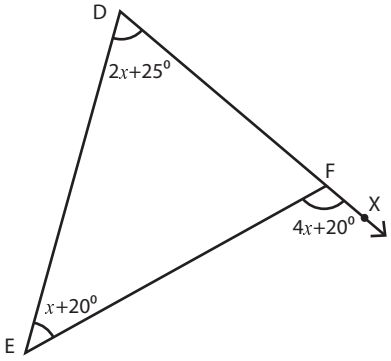
$x =$ **60°** ; $\angle EFX =$ **115°**

6)



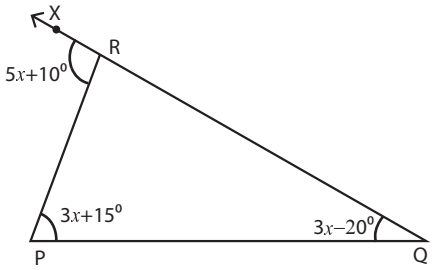
$x =$ **40°** ; $\angle CDX =$ **86°**

7)



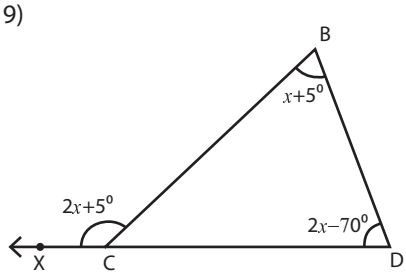
$x =$ **25°** ; $\angle EFX =$ **120°**

8)



$x =$ **15°** ; $\angle PRX =$ **85°**

9)



$x =$ **70°** ; $\angle BCX =$ **145°**