Name : _____

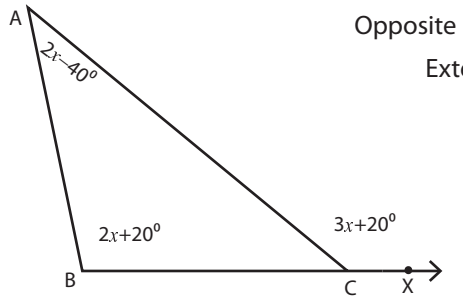
MS3

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

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

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

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

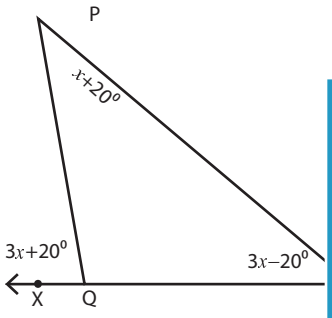
$4x - 3x = 20^0+20^0$

$x = \mathbf{40^0}$

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

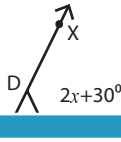
Find the value of x and unknown exterior angle for each triangle.

1)

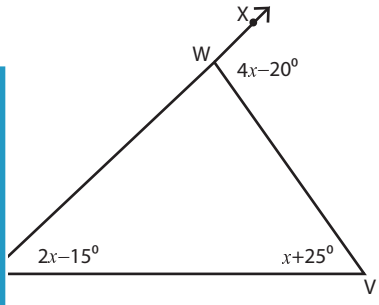


$x =$ _____ ; ∠PQX = _____

2)

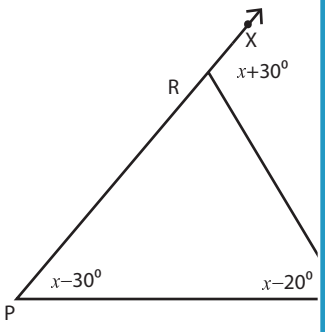


3)

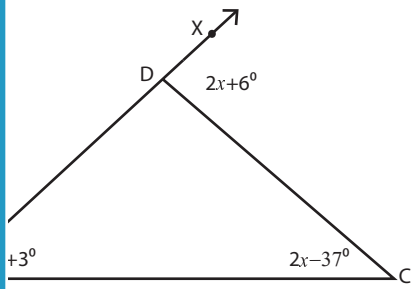


_____ = _____ ; ∠VWX = _____

4)

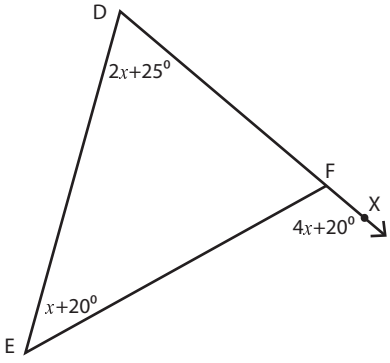


$x =$ _____ ; ∠QRX = _____



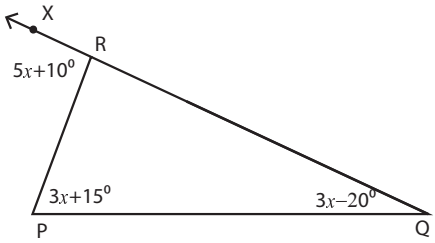
_____ = _____ ; ∠CDX = _____

7)



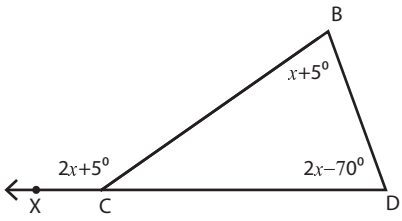
$x =$ _____ ; ∠EFX = _____

8)



$x =$ _____ ; ∠PRX = _____

9)



$x =$ _____ ; ∠BCX = _____

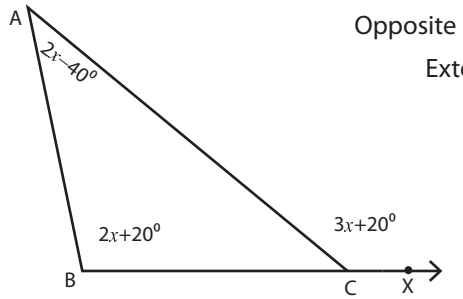
Name : _____

Answer key

MS3

Triangle - Exterior Angle

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



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Opposite interior angles : ∠A and ∠B

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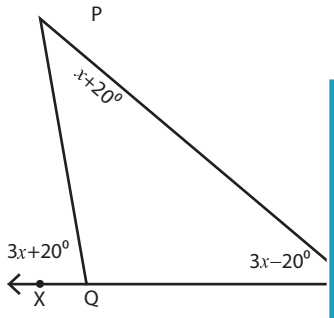
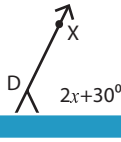
Find the value of x and unknown exterior angle for each triangle.

1)

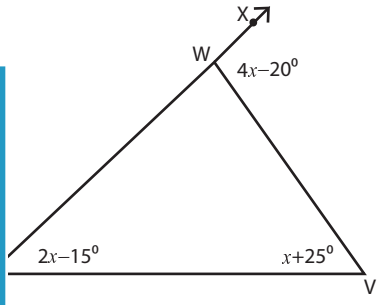


$x =$ 20° ; ∠PQX = 8

2)

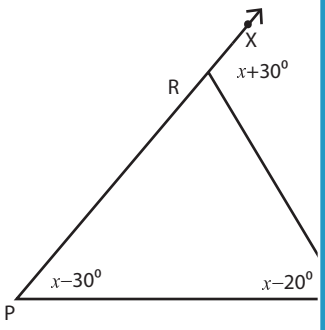


3)

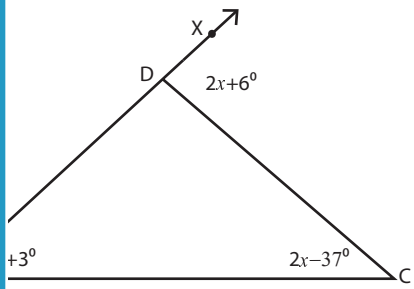


= 30° ; ∠VWX = 100°

4)

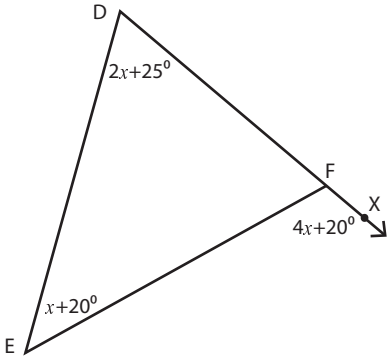


$x =$ 80° ; ∠QRX = 11



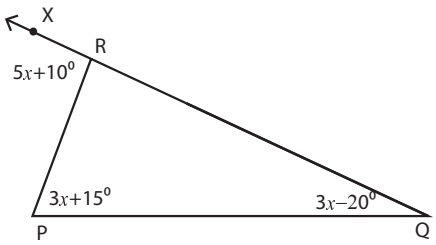
= 40° ; ∠CDX = 86°

7)



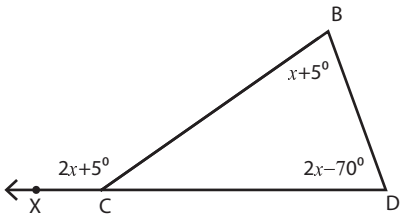
$x =$ 25° ; ∠EFX = 120°

8)



$x =$ 15° ; ∠PRX = 85°

9)



$x =$ 70° ; ∠BCX = 145°