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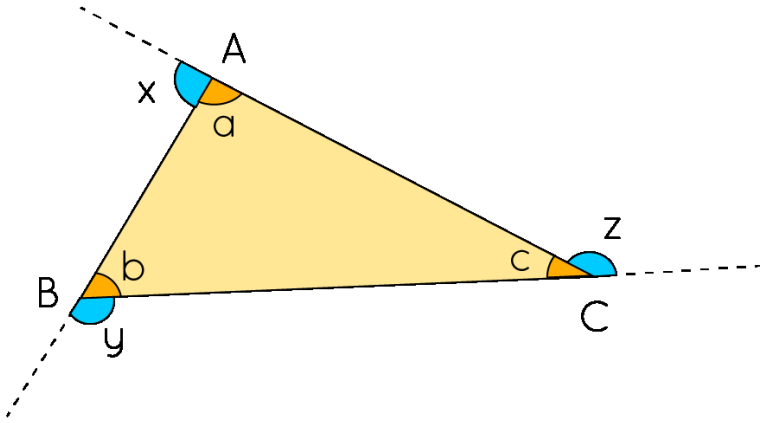
Exterior Angle Theorem Worksheets

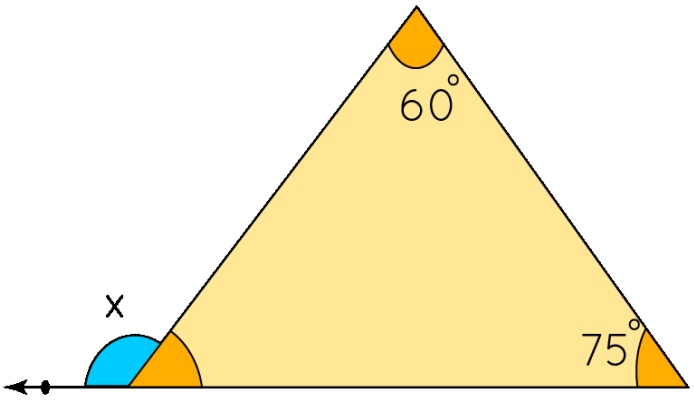
1) By exterior angle theorem, state whether each of the following statements is True/False.



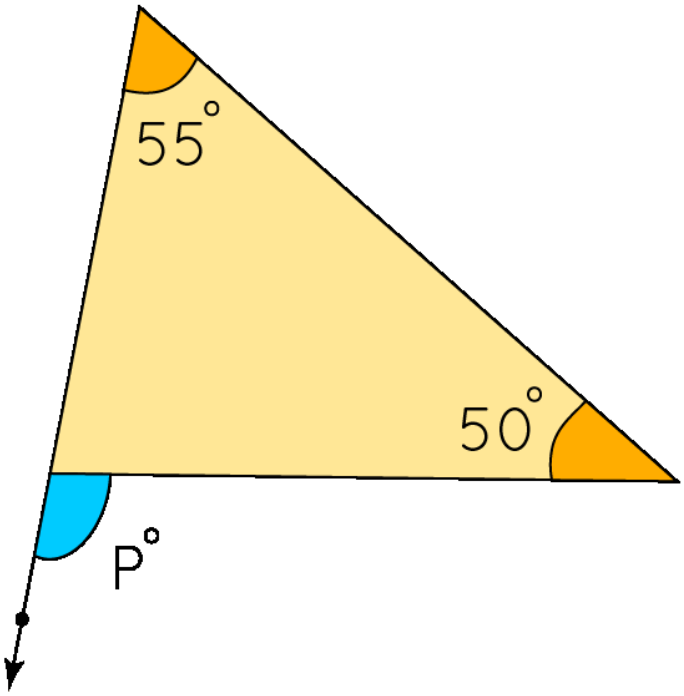
a) a + b = z
b) b + c = x
c) c + a = y

2) Fill in the following blanks with respect to the figure in the Question 1.
(i) We know that the sum of angles in a triangle is 180 degrees. So a + b = ___ degrees.
(ii) c and z form a linear pair. Thus,
z = ___ degrees.
(iii) From (i) and (ii)
a + b = z.
(iv) Similarly, we can prove that _____ and _____.
Hence the exterior angle theorem is proved.

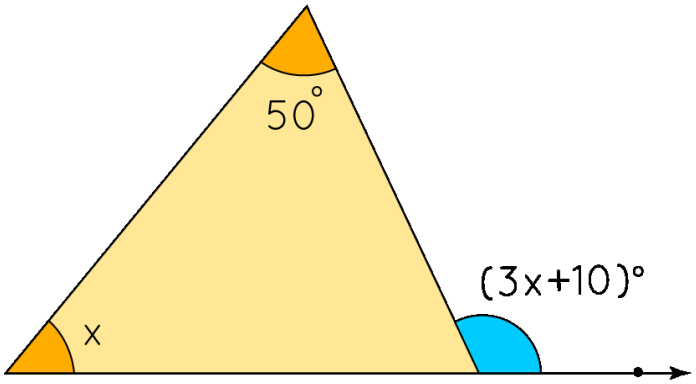
3) Find the value of x using the following triangle.



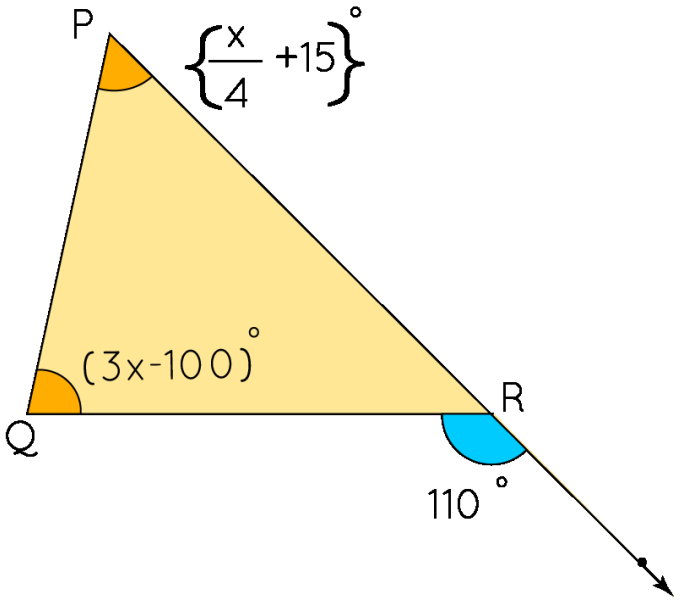
4) Find the value of p using the following triangle.



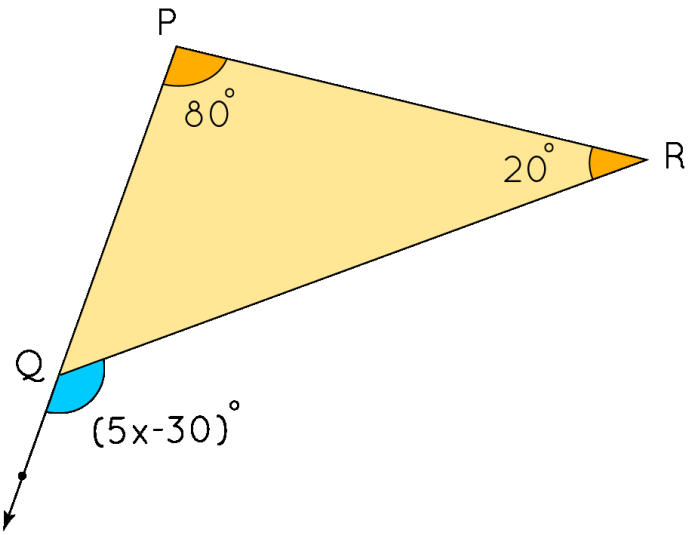
5) Find the value of x in the following triangle.



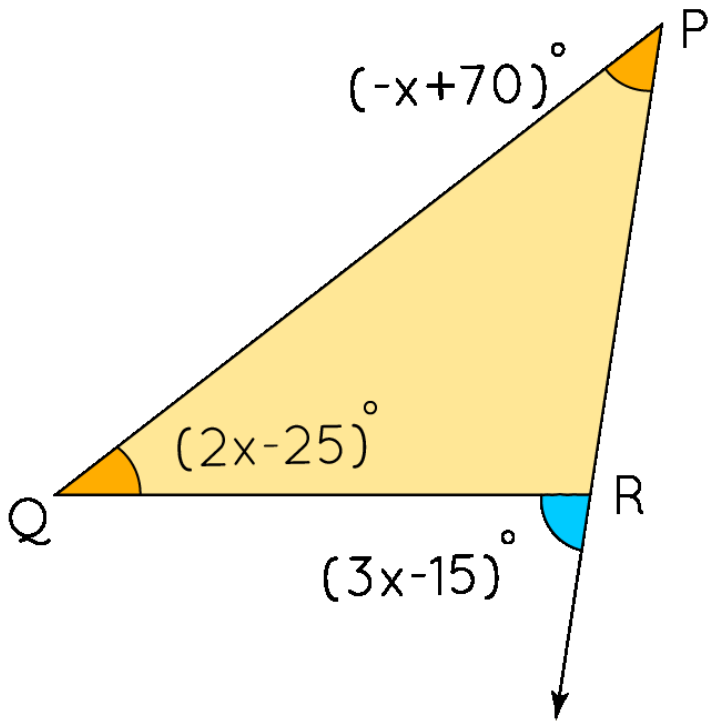
6) Find the angle at Q in the triangle below.



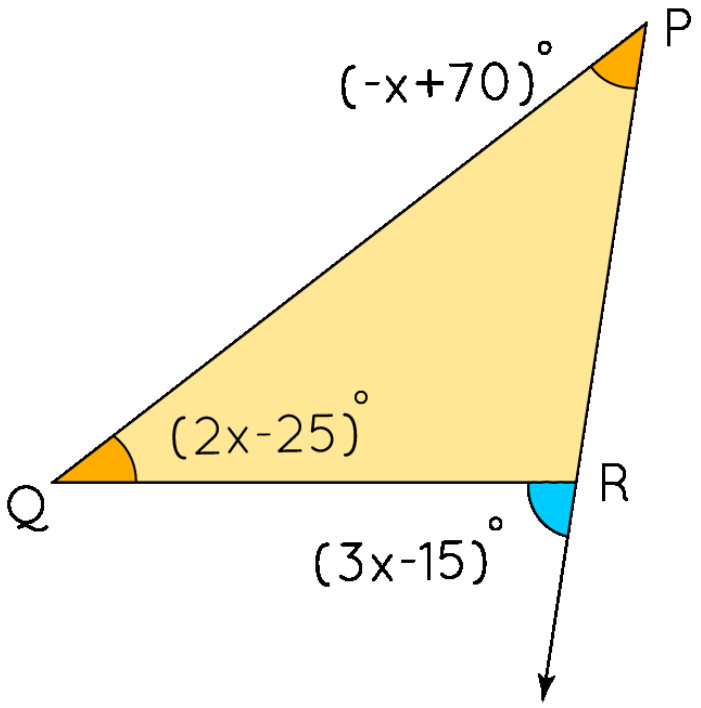
7) Find the value of x in the following triangle.



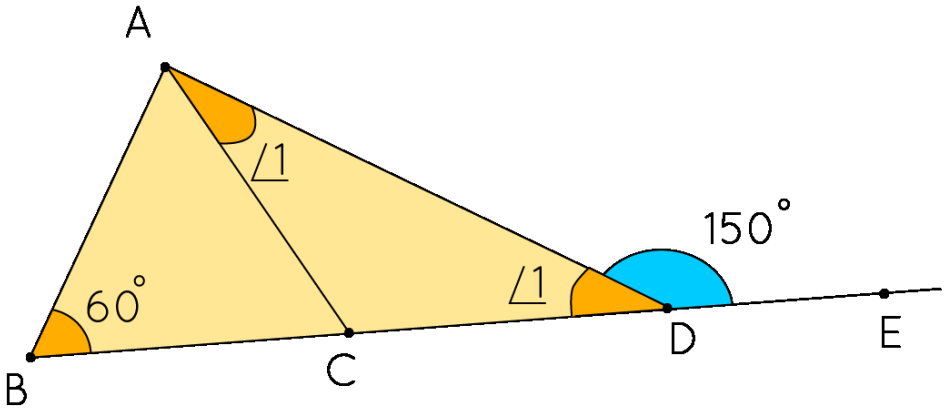
8) Find the measure of the interior angle at Q in the following triangle.



9) State whether the following statement is true with respect to the following triangle.
"∠DAC = 80°, by exterior angle theorem"



10) Find the measure of ∠BAC in the following triangle.


A
∠1
150°
60°
∠1
B
C
D
E

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ANSWERS

1)	a) True b) True c) True
2)	i) 180 – c ii) 180 – c (iv) b + c = x; c + a = y
3)	135°
4)	105°
5)	x = 20
6)	80°
7)	x = 26
8)	x = 35°
9)	False
10)	60°

FUN FACT

1. By exterior angle theorem, an exterior angle of a triangle is equal to the sum of the other two interior angles.
2. An interior angle and its corresponding exterior angle are supplementary.
3. We may have to use the techniques of solving equations while solving for unknown angles in a triangle.