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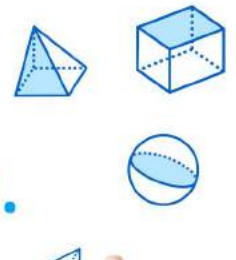

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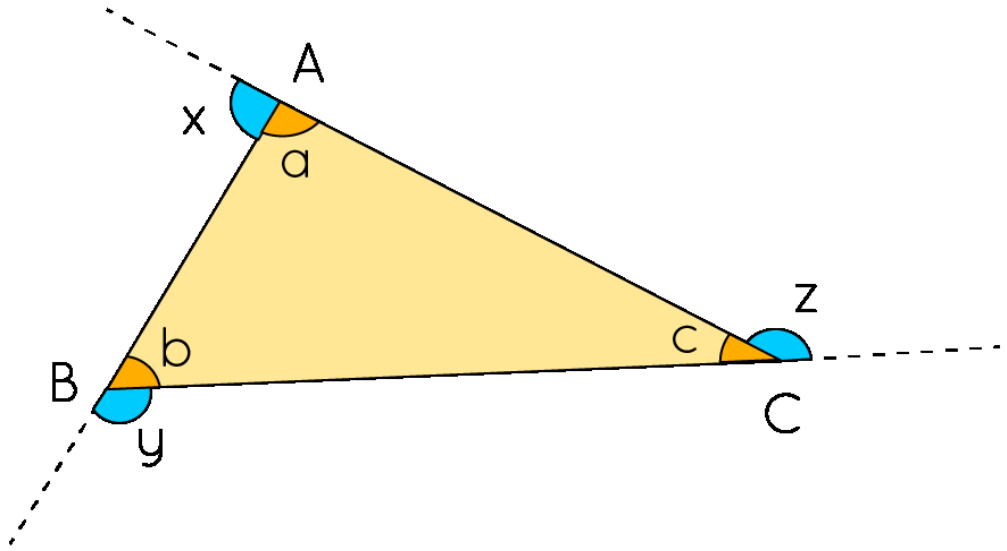
Exterior Angle Theorem Worksheets

1) By exterior angle theorem, which of the following is/are true with respect to the triangle below?

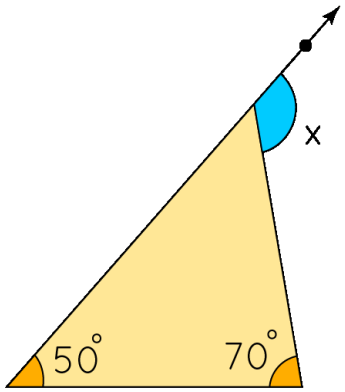


a) a + b = c
b) a + b = z
c) b + c = a
d) b + c = x

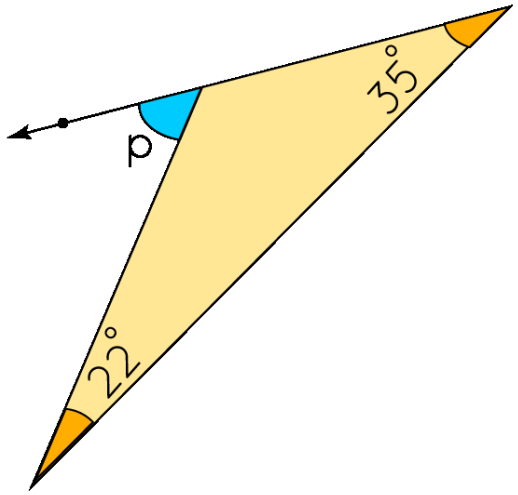
2) Fill in the following blanks with respect to the figure in the Question 1 to prove exterior angle theorem.

(i) We know that the sum of angles in a triangle is 180 degrees. So a + c = ___ degrees.
(ii) b and y form a linear pair. Thus,
y = ___ degrees.
(iii) From (i) and (ii)
a + c = y.
(iv) Similarly, we can prove that _____ and _____.
Hence the exterior angle theorem is proved.

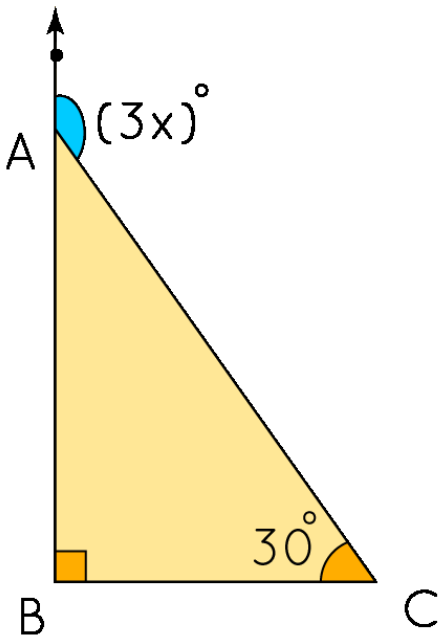
3) Find the value of x using the following triangle.



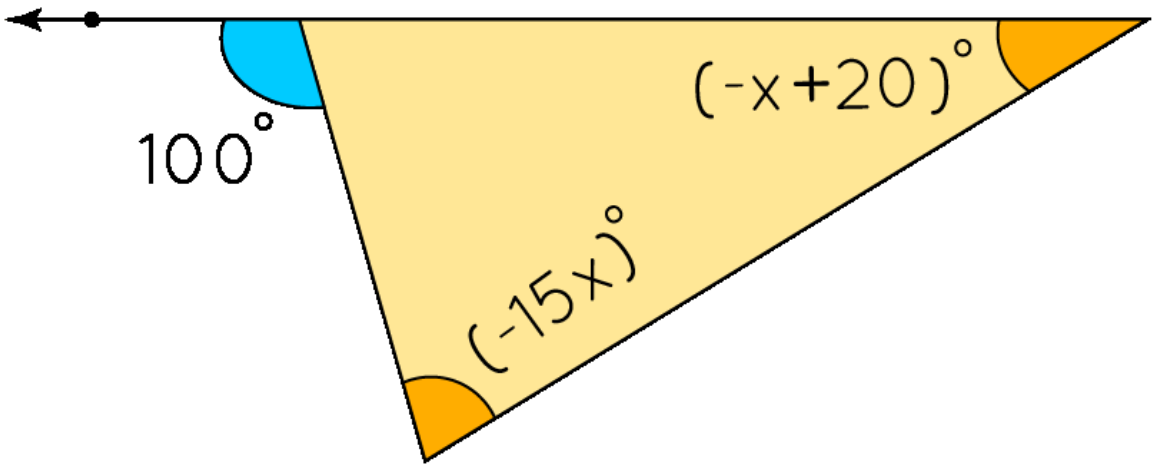
4) Find the value of p using the following triangle.



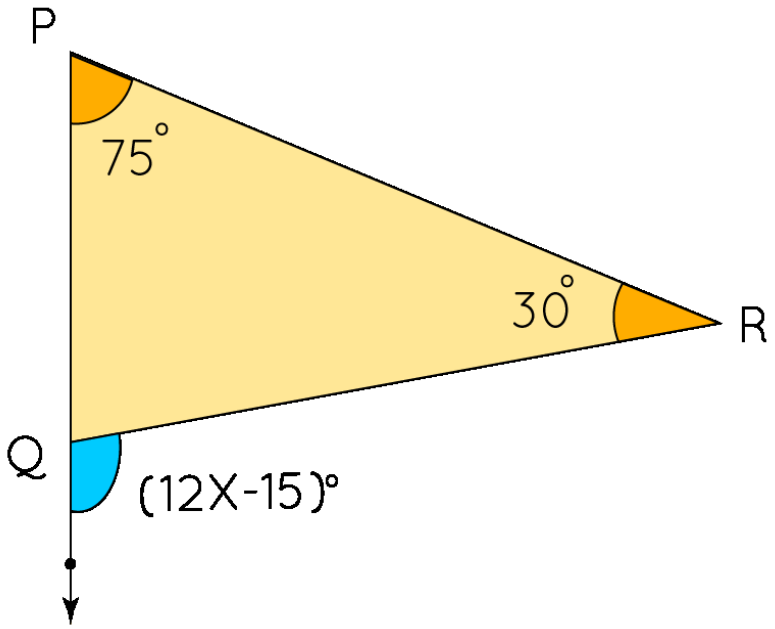
5) Find the value of x in the following triangle.



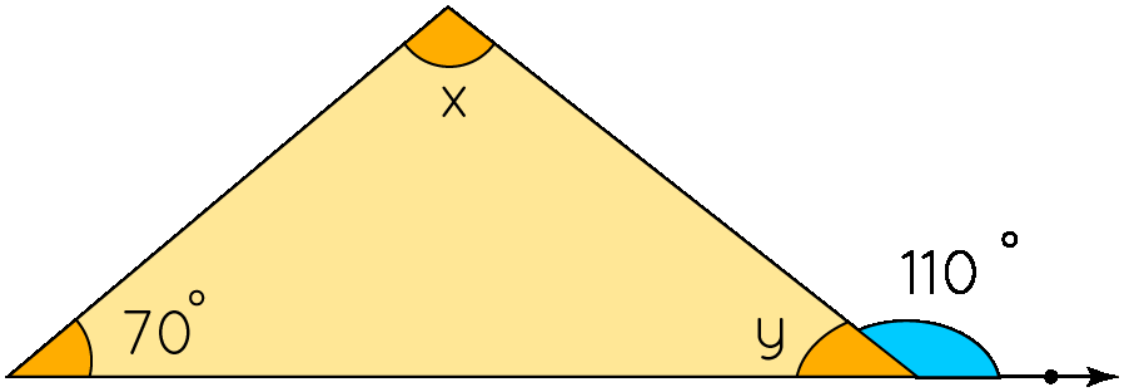
6) Find the angle at B in the triangle below.



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



8) Find the value of x and y using the following figure.

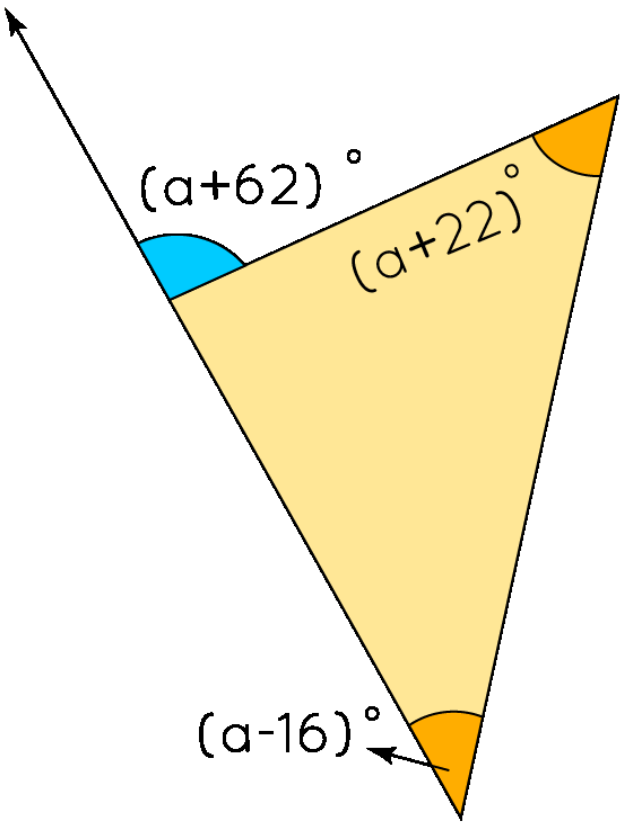


9) Which of the following statement is true about exterior angle theorem?

a) The sum of two interior angles in a triangle is equal to the third exterior angle.

b) The sum of two interior angles in a triangle is equal to any exterior angle of the triangle.

10) Find the measures of all the interior angles of the following triangle.



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ANSWERS

1)	Options b) and d)
2)	i) 180 – b ii) 180 – b (iv) a + b = z; b + c = x
3)	120°
4)	57°
5)	x = 40
6)	25°
7)	x = 10
8)	x = 40° and y = 70°
9)	Option a)
10)	40°, 78°, and 62°

FUN FACT

1. By exterior angle theorem, the sum of any two interior angles of a triangle is equal to the third exterior angle.
2. The exterior angle theorem is used to find unknown angles of a triangle.
3. We may have to use the fact that the sum of angles in a triangle is 180 degrees while solving for the angles of a triangle.