

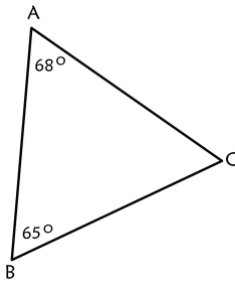


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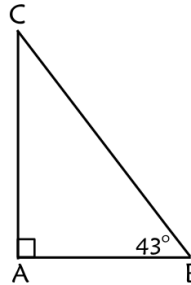
Triangles

1. Classify the given triangle using the sizes of the angles in the triangles.

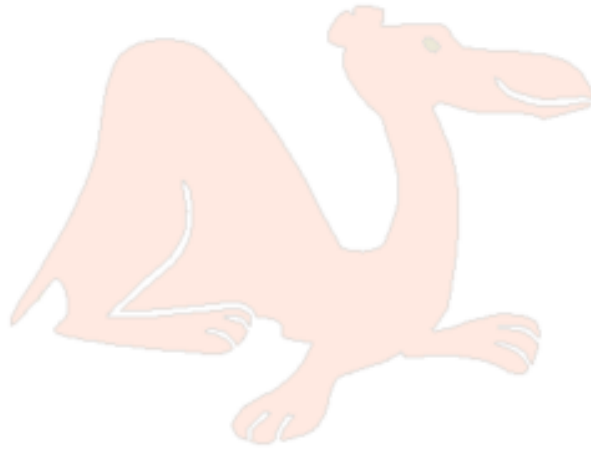
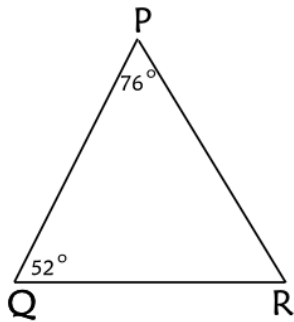
1.1



1.2

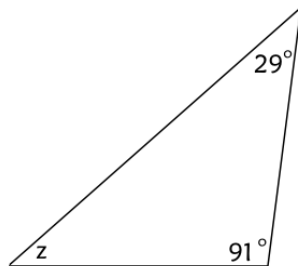


1.3

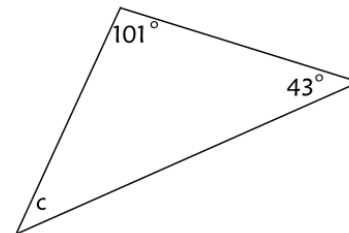


2. Calculate the required angle.

2.1



2.2

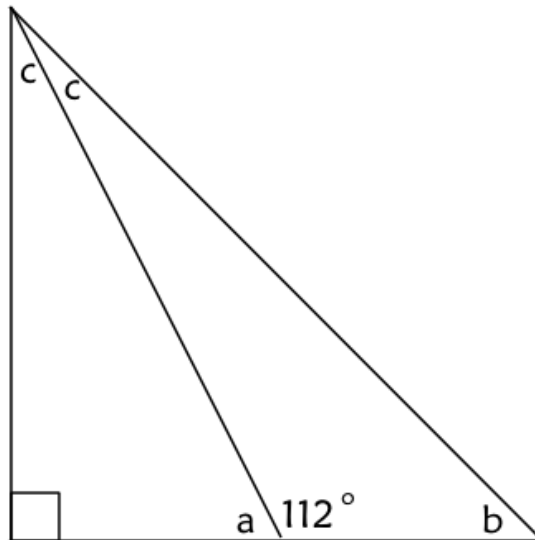




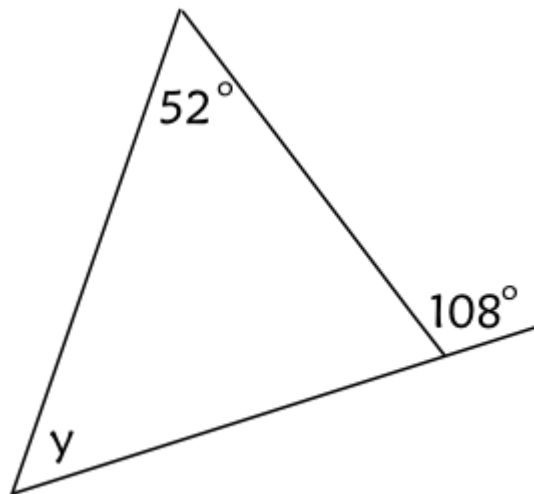
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2.3



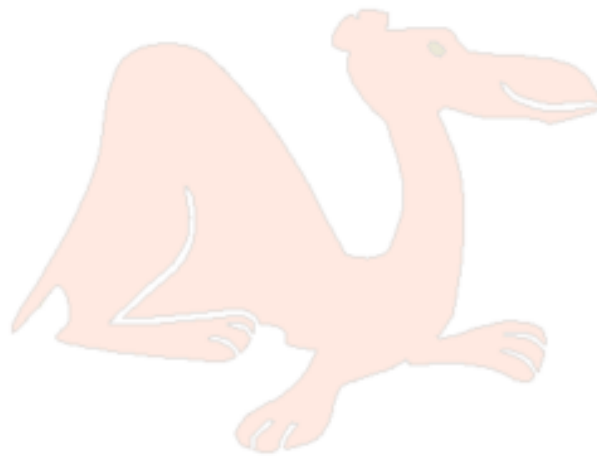
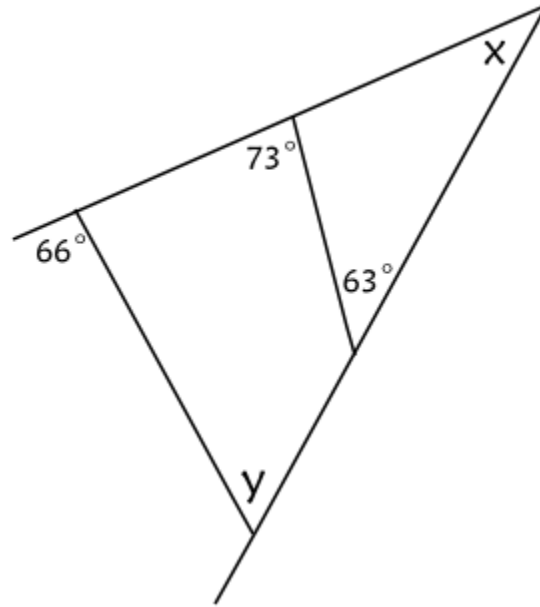
3. Calculate the required angle.





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3.2



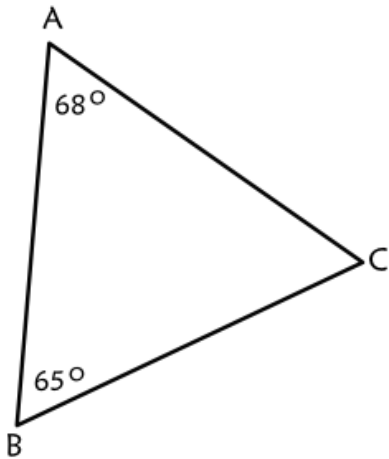


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MEMO

1. Classify the given triangle using the sizes of the angles in the triangles.
[8.3.1.1; 8.3.1.2 ; 8.3.1.3]

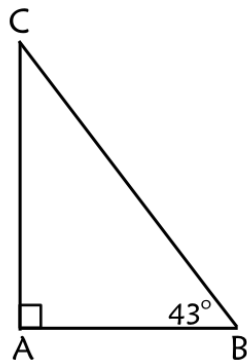
1.1



$$\begin{aligned}\hat{A} + \hat{B} + \hat{C} &= 180^\circ \\ 68^\circ + 65^\circ + \hat{C} &= 180^\circ \\ \hat{C} &= 180^\circ - 133^\circ \\ \hat{C} &= 47^\circ\end{aligned}$$

ΔABC is a **scalene** triangle

1.2



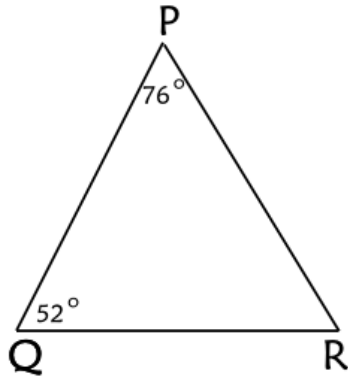
$$\begin{aligned}\hat{A} + \hat{B} + \hat{C} &= 180^\circ \\ 90^\circ + 43^\circ + \hat{C} &= 180^\circ \\ \hat{C} &= 180^\circ - 133^\circ \\ \hat{C} &= 47^\circ\end{aligned}$$

ΔABC is a **right angled** triangle.



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1.3

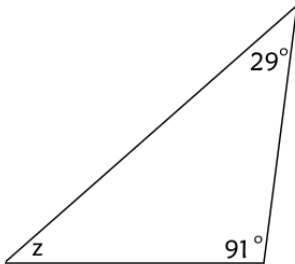


$$\begin{aligned}\hat{P} + \hat{Q} + \hat{R} &= 180^\circ \\ 76^\circ + 52^\circ + \hat{R} &= 180^\circ \\ \hat{R} &= 180^\circ - 128^\circ \\ \hat{R} &= 52^\circ\end{aligned}$$

ΔPQR is an **isosceles** triangle.

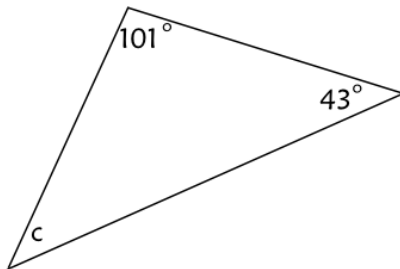
2.1 Calculate the required angle.

[8.3.2.1; 8.3.2.2]



$$\begin{aligned}29^\circ + 91^\circ + z &= 180^\circ \\ z &= 180^\circ - 91^\circ - 29^\circ \\ z &= 60^\circ\end{aligned}$$

2.2



$$\begin{aligned}101^\circ + 43^\circ + c &= 180^\circ \\ c &= 180^\circ - 101^\circ - 43^\circ \\ c &= 36^\circ\end{aligned}$$

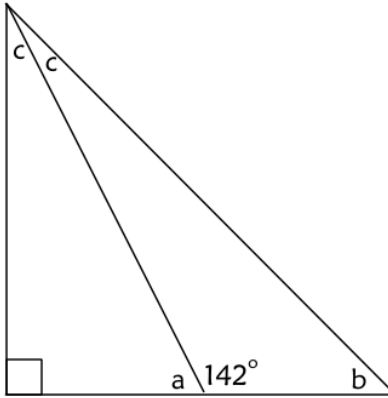




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2.3



$$a + 112^\circ = 180^\circ \text{ (straight line } \angle\text{)}$$
$$a = 68^\circ$$

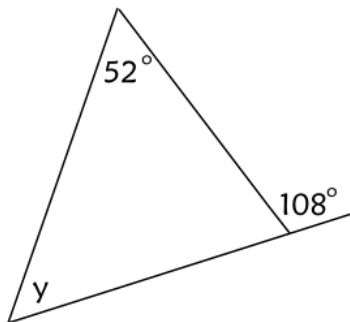
$$a + c + 90^\circ = 180^\circ \text{ (int. } \angle\text{'s)}$$
$$68^\circ + c + 90^\circ = 180^\circ$$
$$c = 22^\circ$$

$$c + b + 112^\circ = 180^\circ \text{ (int. } \angle\text{'s)}$$
$$22^\circ + b + 112^\circ = 180^\circ$$
$$b = 46^\circ$$

3. Calculate the required angle.

[8.3.3.1; 8.3.3.2]

3.1

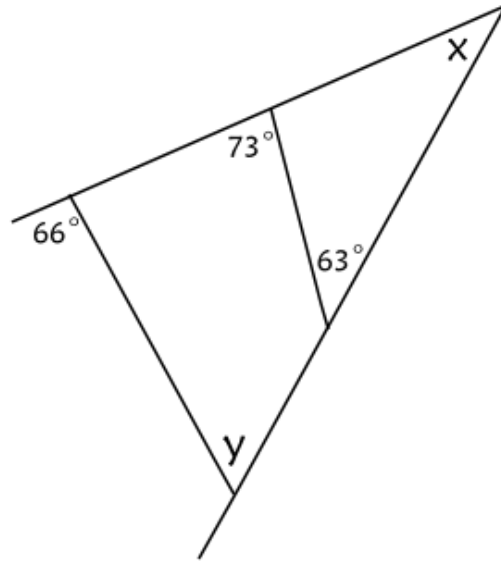


$$108^\circ = 52^\circ + y \text{ (ext. } \angle\text{)}$$
$$y = 180^\circ - 52^\circ$$
$$y = 56^\circ$$



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3.2



$$x + 63^\circ = 73^\circ \text{ (ext. <)} \\ x = 10^\circ$$

$$66^\circ = x + y \text{ (ext. <)} \\ 66^\circ = 10^\circ + y \\ y = 56^\circ$$

