

Angles

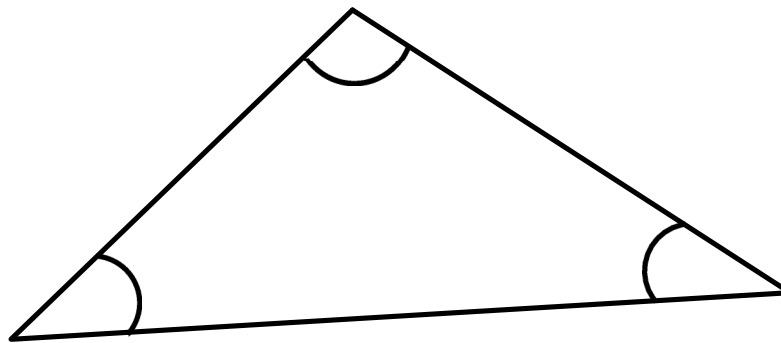
Angles in a Triangle

LI

- Find missing angles in a triangle.

SC

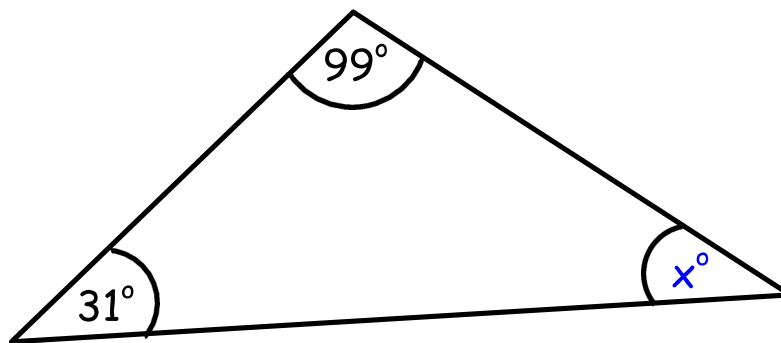
- Use the 2-calculation strategy.



The 3 angles in any triangle add up to 180°

Example 1

Find the missing angle x° .



Step 1 : (+)

$$\begin{array}{r} 99^\circ \\ + 31^\circ \\ \hline 130^\circ \\ \hline 1 \end{array}$$

Step 2 : (-)

$$\begin{array}{r} 180^\circ \\ - 130^\circ \\ \hline 50^\circ \\ \hline \end{array}$$

$$x^\circ = 50^\circ$$

Example 2

Find the missing angle of a triangle if 2 of the angles are 34° and 57° .

Step 1: (+)

$$\begin{array}{r}
 34^\circ \\
 + \quad 57^\circ \\
 \hline
 91^\circ \\
 \hline
 1
 \end{array}$$

Step 2: (-)

$$\begin{array}{r}
 \cancel{1} \cancel{8} 0^\circ \\
 - \quad 91^\circ \\
 \hline
 89^\circ \\
 \hline
 \boxed{89^\circ}
 \end{array}$$

Example 3

Find the missing angle of a triangle if 2 of the angles are 76.6° and 35.3° .

Step 1: (+)

$$\begin{array}{r}
 76.6^\circ \\
 + \quad 35.3^\circ \\
 \hline
 111.9^\circ \\
 \hline
 1
 \end{array}$$

Step 2: (-)

$$\begin{array}{r}
 \cancel{1}^7 \cancel{8}^1 \cancel{0}^9 . 0^\circ \\
 - \quad 111.9^\circ \\
 \hline
 68.1^\circ \\
 \hline
 \end{array}$$

$$68.1^\circ$$

Questions		
Find the third angle of a triangle if two of the angles are :		
1) 24° and 68°	9) 42.3° and 29.4°	17) 11.31° and 29.4°
2) 12° and 79°	10) 15.5° and 32.9°	18) 51.5° and 65.01°
3) 98° and 7°	11) 8.8° and 3.7°	19) 12.34° and 3.7°
4) 100° and 4°	12) 44.6° and 90°	20) 26.1° and 33.33°
5) 64° and 75°	13) 44.4° and 77.7°	21) 11.11° and 6.5°
6) 82° and 43°	14) 12.8° and 45.6°	22) 88.1° and 2.02°
7) 99° and 34°	15) 0.9° and 100.8°	23) 0.16° and 120.8°
8) 106° and 23°	16) 54.8° and 54.8°	24) 5.9° and 1.65°

Answers

1) 24° and 68°	9) 42.3° and 29.4°	17) 11.31° and 29.4°
2) 12° and 79°	10) 15.5° and 32.9°	18) 51.5° and 65.01°
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6) 82° and 43°	14) 12.8° and 45.6°	22) 88.1° and 2.02°
7) 99° and 34°	15) 0.9° and 100.8°	23) 0.16° and 120.8°
8) 106° and 23°	16) 54.8° and 54.8°	24) 5.9° and 1.65°

R E C A P

(How to find a missing angle in a triangle)

add both angles together to 180°

subtract both angles added together from 180°

subtract one angle from 180°

subtract 2 angles in question

add 2 angles in question

times 2 angles in question

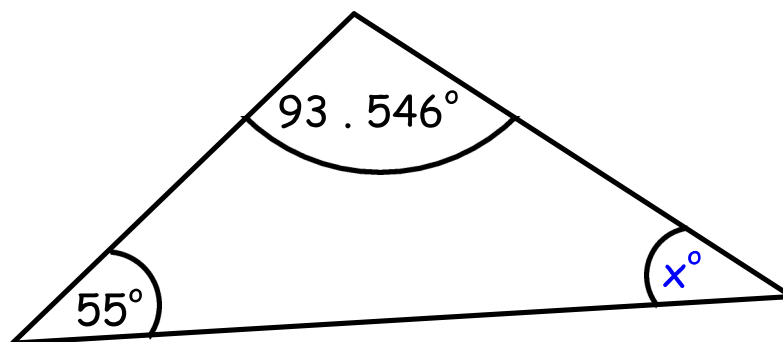
add one angle to 180°

divide 2 angles in question

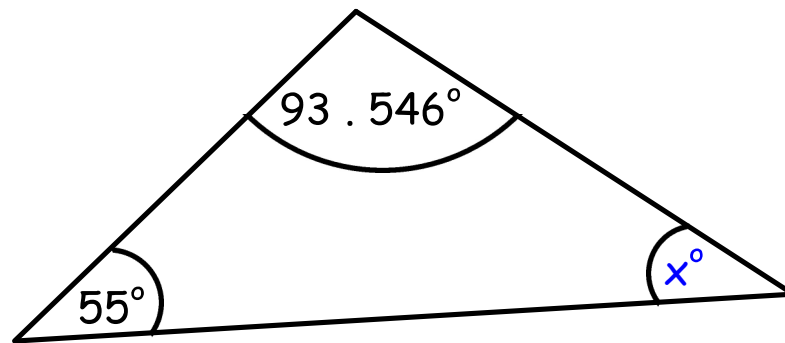
subtract each angle separately from 180°

H O M E W O R K

Calculate x° :



H O M E W O R K

Calculate x° :

$$\begin{array}{r} 93.546^\circ \\ + 55.000^\circ \\ \hline 148.546^\circ \end{array}$$

$$\begin{array}{r} 180.000^\circ \\ - 148.546^\circ \\ \hline 31.454^\circ \end{array}$$

$$x^\circ = 31.454^\circ$$