

# Complementary vs Supplementary

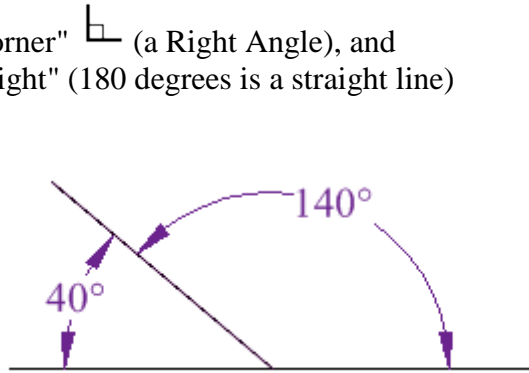
A related idea is [Complementary Angles](#), they add up to  $90^\circ$

How can you remember which is which? Easy! Think:

- "C" of Complementary stands for "Corner"  (a Right Angle), and
- "S" of Supplementary stands for "Straight" (180 degrees is a straight line)

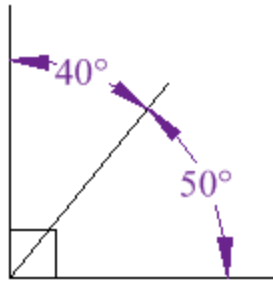
These two angles ( $140^\circ$  and  $40^\circ$ ) are Supplementary Angles, because they add up to  $180^\circ$ .

Notice that together they make a [straight angle](#).



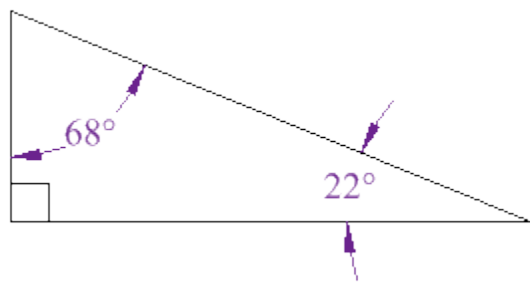
These two angles ( $40^\circ$  and  $50^\circ$ ) are **Complementary Angles**, because they add up to  $90^\circ$ .

Notice that together they make a [right angle](#).



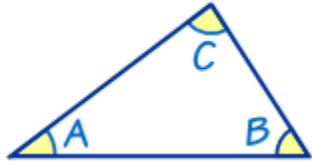
## Right Angled Triangle

In a right angled triangle, the two non-right angles are complementary, because in a triangle [the three angles add to  \$180^\circ\$](#) , and  $90^\circ$  has already been taken by the right angle.



If two angles add to  $90^\circ$ , we say they "**Complement**" each other.

## Missing angles Triangles Contain 180°

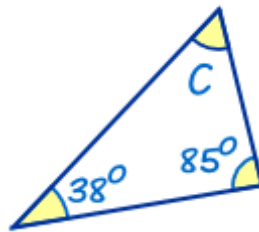


In a triangle, the three angles always add to 180°:

$$A + B + C = 180^\circ$$

We can use that fact to find a missing angle in a triangle:

**Example: Find the Missing Angle "C"**



Start With:  $A + B + C = 180^\circ$

Fill in what we know:  $38^\circ + 85^\circ + C = 180^\circ$

Rearrange  $C = 180^\circ - 38^\circ - 85^\circ$

Calculate:  $C = 57^\circ$