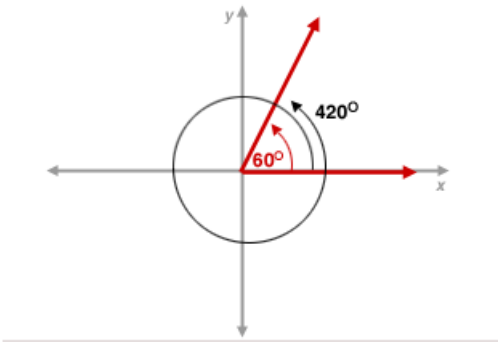
Finding Coterminal Angles

- **Review**: **Coterminal angles** are angles whose **terminal sides** lie in the same place.
- The measures of coterminal angles differ by a multiple of 360°.



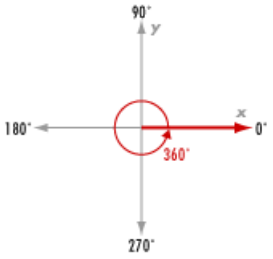
Angles with the same initial side and terminal side are coterminal angles.

Recall that **coterminal angles** are angles that have **terminal sides** in the same location.

The difference of the measures of coterminal angles is a multiple of 360° (some number of full circles).

Example Is 360° coterminal with 0°?

360° – 0° = 360° *A multiple of 360, so these are coterminal angles.*



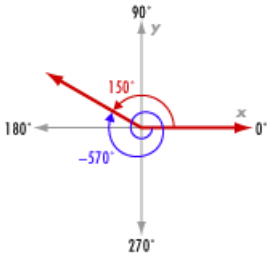
To determine if 360° is coterminal with 0°, find the difference of the measures of the two angles:

$$360° - 0° = 360°$$

The difference, 360°, is a multiple of 360°. Thus, 360° is coterminal with 0°.

Example Are –570° and 150° coterminal angles?

–570° – 150° = –720° *A multiple of 360, so these are coterminal angles.*



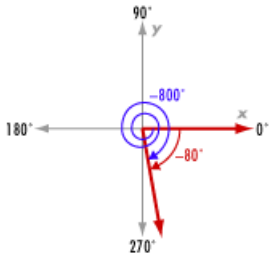
What about – 570° and 150°? Are these two angles coterminal?

The difference of the measures of the two angles is – 720°. Since – 720° is a multiple of 360°, they are coterminal angles.

Example Are –800° and –80° coterminal angles?

–800° – (–80°) =
–800° + 80° = –720° *A multiple of 360, so these are coterminal angles.*

Notice that even though these are both negative angles, they are coterminal because their difference is a multiple of 360°.



Are .– 800° and – 80° cotermial? Yes, since their measures differ by a multiple of 360°

REMEMBER: Coterminal angles are not the same angle; they just have terminating sides in the same location.