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Insert graphic organizer

Complementary angles - 2 angles whose sum is 90° or

$\pi/2$ radians

Supplementary angles - 2 angles whose sum is 180° or

π radians

Degrees   Radians

Find the complement & supplement of each.

1. 72°

2. 143°

1. $\dfrac{\pi}{12}$

Comp: $\dfrac{\pi}{2} - \dfrac{\pi}{12}$

$\dfrac{6\pi}{12} - \dfrac{\pi}{12} = \boxed{\dfrac{5\pi}{12}}$

Supp: $\pi - \dfrac{\pi}{12}$

2. $\dfrac{5\pi}{6}$

$\dfrac{12\pi}{12} - \dfrac{\pi}{12} = \boxed{\dfrac{11\pi}{12}}$

Comp: $\pi/2 - 5\pi/6 = 3\pi/6 - 5\pi/6 = -\dfrac{2\pi}{6}$ none

Supp: $\pi - 5\pi/6 = \boxed{\pi/6}$
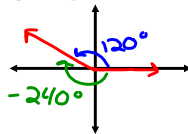
Complementary & Supplementary Angles

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next flap

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Coterminal angles - angles that have the same initial & terminals

To find coterminal angles, you + or - 360° or 2π radians

120°

-240°

Degrees   Radians

Find 1 positive & 1 negative coterminal angle of each.

1. 40°

2. -120°

3. 540°

1. $\dfrac{17\pi}{6}$

+: $\dfrac{17\pi}{6} + \dfrac{2\pi}{1}$

$\dfrac{17\pi}{6} + \dfrac{12\pi}{6} = \boxed{\dfrac{29\pi}{6}}$

-: $\dfrac{17\pi}{6} - \dfrac{2\pi}{1} = \dfrac{17\pi}{6} - \dfrac{12\pi}{6} = \dfrac{5\pi}{6}$

$5\pi/6 - \dfrac{2\pi}{6} = \boxed{-\dfrac{7\pi}{6}}$ ↑ Still pos.

2. $-\dfrac{3\pi}{5}$

+: $-\dfrac{3\pi}{5} + \dfrac{2\pi}{1} = -\dfrac{3\pi}{5} + \dfrac{10\pi}{5} = \boxed{\dfrac{7\pi}{5}}$

-: $-\dfrac{3\pi}{5} - \dfrac{10\pi}{5} = \boxed{\dfrac{-13\pi}{5}}$

Coterminal Angles

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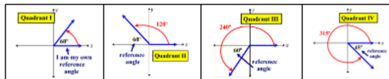
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Reference angles - the smallest angle that the terminal side of an angle makes with the x-axis

*always positive

*always less that 90° or $\pi/2$ radians

Quadrant I	Quadrant II	Quadrant III	Quadrant IV

I am my own reference angle   reference angle   reference angle   reference angle

A reference angle is always positive and is always less than 90°.

Remember: The reference angle is measured from the terminal side of the original angle "to" the *x*-axis (not "to" the *y*-axis).
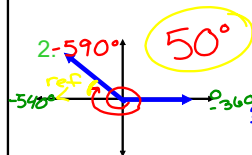
Reference triangles are drawn to the x-axis.

Remember: your triangle should be part of a bowtie

Degrees   **Radians**

Find the reference angle of each.

1. 280°

1. $-\dfrac{3\pi}{5}$

$-\dfrac{6\pi}{10}$

$\dfrac{4\pi}{10} = \dfrac{2\pi}{5}$

2. -590°

50°

2.

$-540°$ -360

$-\dfrac{3\pi}{2}$ $\dfrac{-10\pi}{10}$

$-\dfrac{6\pi}{10}$ $-\dfrac{\pi}{2}$

$-\dfrac{5\pi}{10}$

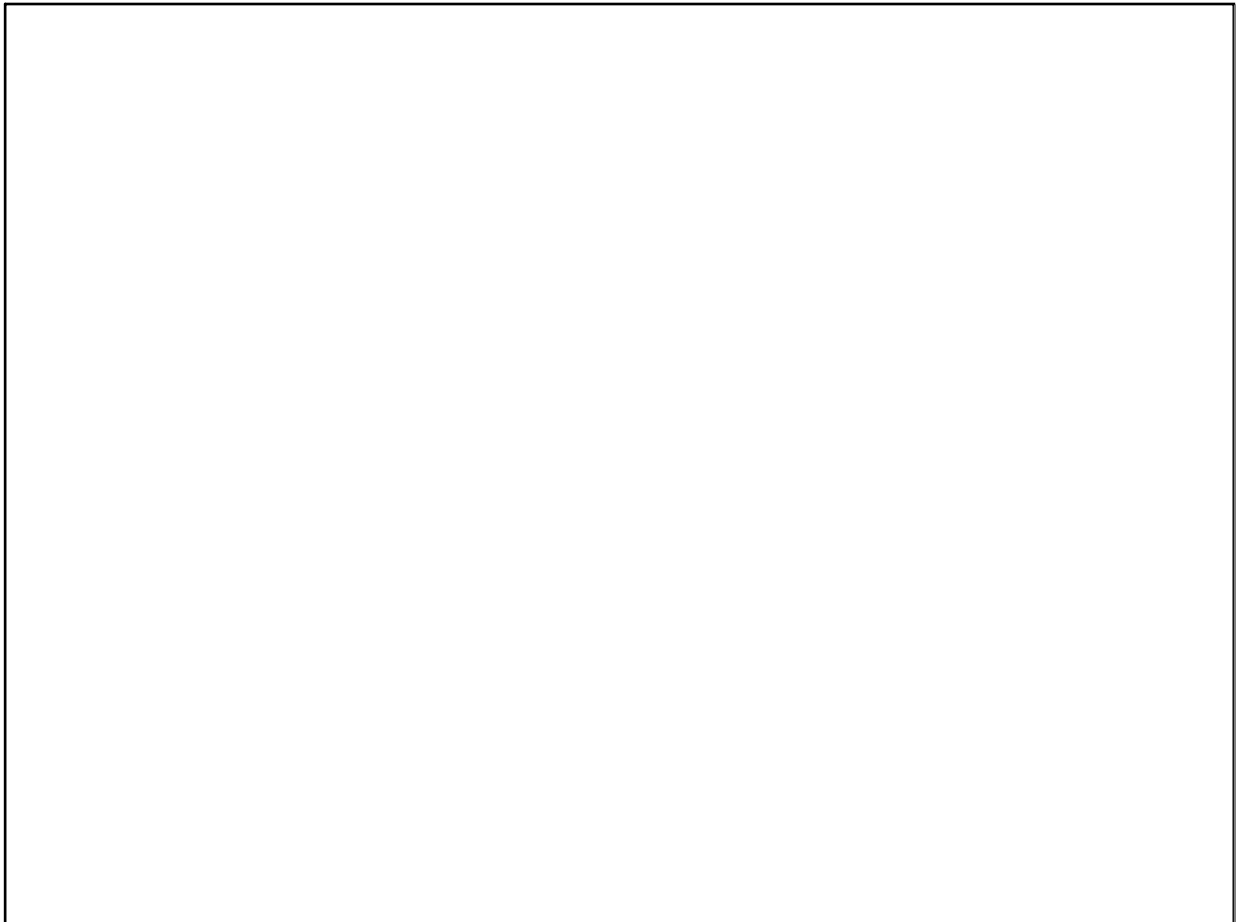$\dfrac{2\pi}{7}$ $\dfrac{23\pi}{7}$ $\dfrac{14\pi}{7}$ 21π

$\dfrac{2\pi}{7}$
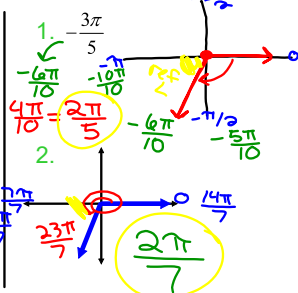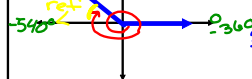
Reference Angles

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