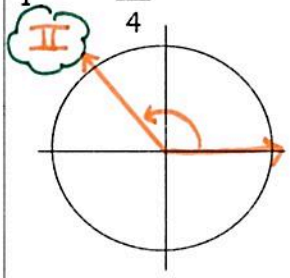
Precalculus HW Name Key.

4.1 Worksheet-Day 1 *(Radians & Reference Angles)*

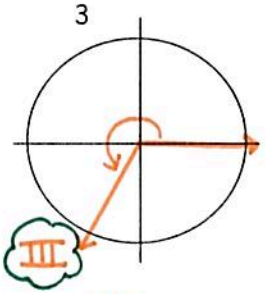
Sketch each angle in standard position and state the quadrant and reference angle (in the same measure as the given angle).

1. $\frac{3\pi}{4}$



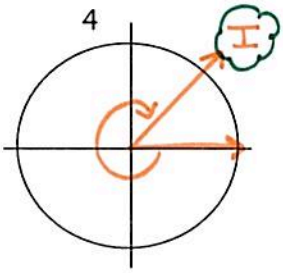
Ref. ∠ = $\frac{\pi}{4}$

2. $\frac{4\pi}{3}$



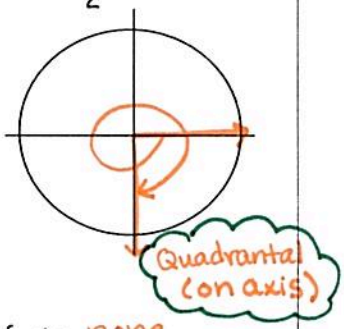
Ref. ∠ = $\frac{\pi}{3}$

3. $-\frac{7\pi}{4}$



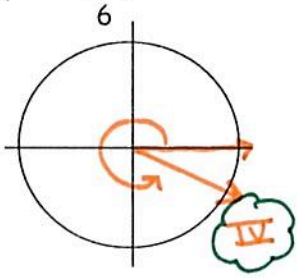
Ref. ∠ = $\frac{\pi}{4}$

4. $\frac{-5\pi}{2}$



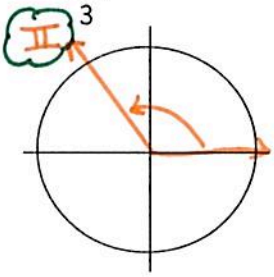
Ref. ∠ = none

5. $\frac{11\pi}{6}$



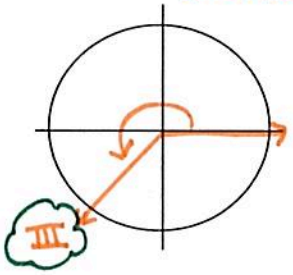
Ref. ∠ = $\frac{\pi}{6}$

6. $\frac{2\pi}{3}$



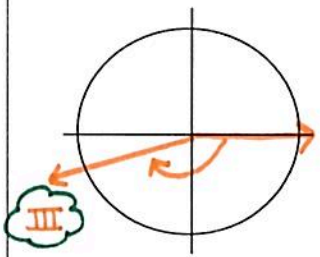
Ref. ∠ = $\frac{\pi}{3}$

7. 4 $\pi = 3.14$, $2\pi = 6.28$



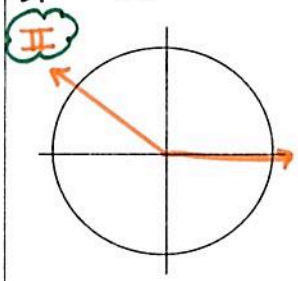
Ref. ∠ = $4-\pi$

8. -3



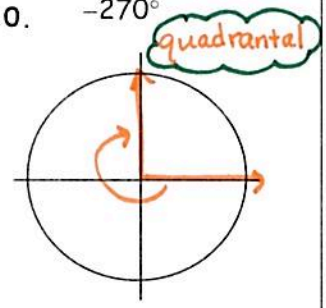
Ref. ∠ = $\pi - 3$

9. $150°$



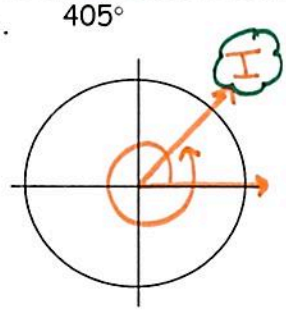
Ref. ∠ = $30°$

10. $-270°$



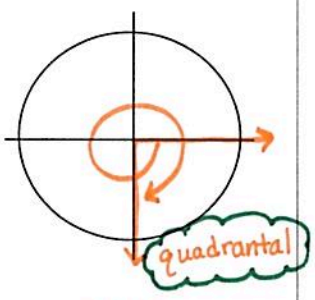
Ref. ∠ = none

11. $405°$



Ref. ∠ = $45°$

12. $-450°$



Ref. ∠ = none

4.1 Worksheet-Day 2 *(Coterminal Angles & Angle Conversions)*

Determine two coterminal angles (one positive and one negative) for each angle. Answers can vary. Answers need to be in the same measure as the given angle.

1. $\frac{2\pi}{3}$

$\frac{2\pi}{3} + \frac{6\pi}{3} = \frac{8\pi}{3}$ (+)

$\frac{2\pi}{3} - \frac{6\pi}{3} = \frac{-4\pi}{3}$ (-)

2. $-\frac{9\pi}{4}$

$-\frac{9\pi}{4} + \frac{8\pi}{4} = \frac{-\pi}{4}$ (-)

$-\frac{\pi}{4} + \frac{8\pi}{4} = \frac{7\pi}{4}$ (+)

3. $-\frac{2\pi}{15}$

$-\frac{2\pi}{15} + \frac{30\pi}{15} = \frac{28\pi}{15}$ (+)

$-\frac{2\pi}{15} - \frac{30\pi}{15} = \frac{-32\pi}{15}$ (-)

4. $-36°$

$-36° + 360° = 324°$ (+)

$-36° - 360° = -396°$ (-)

5. $-390°$

$-390° + 360° = -30°$ (-)

$-30° + 360° = 330°$ +

6. $114°$

$114° + 360° = 474°$ (+)

$114° - 360° = -246°$ (-)

Rewrite each angle in degree measure.

7. $\frac{3\pi}{2}$

$\frac{3 \cdot 180}{2} = 270°$

8. $-\frac{7\pi}{6}$

$\frac{-7 \cdot 180}{6} = -210°$

Rewrite each angle in radian measure in the following ways:

a) in terms of π

b) the rounded decimal equivalent (round three decimal places)

9. $150°$

a) $\frac{150°}{180°} = \frac{x}{\pi}$

$x = \frac{5\pi}{6}$

b) 2.617 or 2.618

10. $-270°$

a) $\frac{-270°}{180°} = \frac{x}{\pi}$

$x = \frac{-3\pi}{2}$

b) -4.712