

Degree \rightarrow Radians

$$\times \frac{\pi}{180^\circ}$$

Sector 1 Intro to Trig Review for Quiz

Radians \rightarrow Degrees

$$\times \frac{180^\circ}{\pi}$$

Name _____

Convert each degree measure into radians and each radian measure into degrees:

1. 125°

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

3. $\frac{13\pi}{12}$

5. 1.4 unitless

measures are
radian measures.
multiply by $\frac{180^\circ}{\pi}$.
Divide by π .

Multiply by appropriate conversion factor. Simplify ratio of coefficients for radian values.

Sketch each angle in standard position:

5. -260°

6. 530°

7. $\frac{17\pi}{6}$

8. $-\frac{13\pi}{4}$

Go clockwise for negative angles.

Go counter-clockwise for positive angles.

In what quadrant does the angle terminate?

9. -808°

10. 1885°

11. $-\frac{17\pi}{3}$

12. $\frac{23\pi}{4}$

Find the principle angle. (the coterminal angle that lies between 0° and 360°). If between 0° and 90° , it's Q1. If between 90° and 180° , Q2. If between 180° and 270° , Q3. If between 270° and 360° , Q4.

What is the reference angle?

13. -650°

14. 1880°

15. $-\frac{39\pi}{18}$

16. $\frac{65\pi}{6}$

- Convert to degrees, if necessary.
- Find the principle angle.
- Use this organizer:

QUAD II
Ref angle = $180^\circ - \text{angle}$

$\text{angle} - 180^\circ = \text{ref. angle}$

QUAD III

QUAD I
Reference angle = angle

$360^\circ - \text{angle} = \text{ref. angle}$

QUAD IV

Remember...

Reference angles
must be
positive and
acute!

Find a positive and a negative coterminal angle for the given angle.

$$17. -865^\circ$$

$$18. 992^\circ$$

$$19. \frac{55\pi}{4}$$

$$20. -\frac{69\pi}{45}$$

Simply add/subtract multiples of 360° or 2π . For radian values, let your calculator do the work for you! For example, given $\frac{5\pi}{18}$, I can find coterminal angles by entering

$$\frac{5}{18} + 2 \text{ and } \frac{5}{18} - 2$$

Find the complement and supplement of each angle (if possible)

$$21. 64^\circ$$

$$22. 158^\circ$$

$$23. \frac{7\pi}{12}$$

$$24. \frac{11\pi}{18}$$

Get the fraction value. Put π back in.

Complementary angles add up to 90° or $\frac{\pi}{2}$

Supplementary angles add up to 180° or π .

To find complements of radians on calculator (Ex $\frac{4\pi}{13}$, enter

$\frac{1}{2} - \frac{4}{13}$ } get fraction value

put π back in

$$\text{ANS: } \frac{5\pi}{26}$$

Convert to degree-decimal to the nearest thousandth (three decimal places)

$$25. 73^\circ 35'$$

$$26. -88^\circ 17' 55''$$

use your calculator

For graphing calculator,
the seconds symbol "

is on the \oplus key.

Convert to DMS

$$27. 327.55^\circ$$

use
ALPHA +
to enter

$$28. -366.15^\circ$$

To find supplements of radians using calculator (Ex $\frac{7\pi}{29}$..

ENTER $1 - \frac{7}{29}$ } get fraction
ANS: $\frac{22\pi}{29} *$ $\frac{29}{29}$ } put π back

Section 1 Intro to Trig Review for Quiz

Name _____

Convert each degree measure into radians and each radian measure into degrees:

1. $125^\circ \times \frac{\pi}{180^\circ}$

$\frac{25\pi}{36}$

2. $-\frac{3\pi}{4} \times \frac{180^\circ}{\pi}$

-135°

3. $\frac{13\pi}{12} \times \frac{180^\circ}{\pi}$

195°

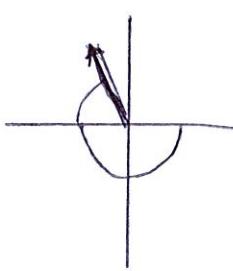
5. $1.4 \times \frac{180^\circ}{\pi}$ DIVIDE by π !

80.2°

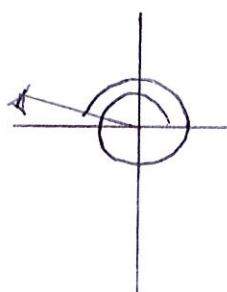
this is a unitless measure.

Sketch each angle in standard position:

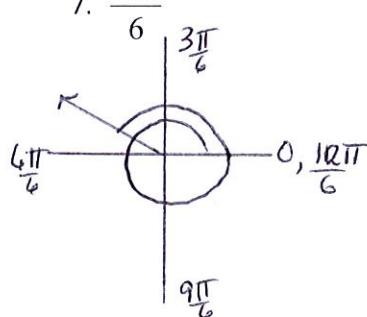
5. -260°



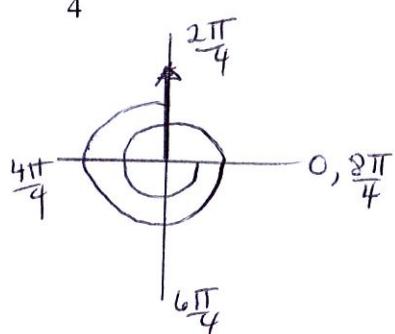
6. 530°



7. $\frac{17\pi}{6}$



8. $-\frac{13\pi}{4}$



In what quadrant does the angle terminate?

9. -808°

$$\begin{aligned} &+360^\circ \\ &+360^\circ \\ &+360^\circ \\ &+360^\circ \end{aligned}$$

272° is the principle angle

~~Q3~~ Q4

What is the reference angle?

10. 1885°

$$\begin{aligned} &-360^\circ \\ &-360^\circ \\ &-360^\circ \\ &-360^\circ \\ &-360^\circ \end{aligned}$$

Q1

11. $-\frac{17\pi}{3} + \frac{6\pi}{3}$

$$\begin{aligned} &+ \frac{6\pi}{3} \\ &+ \frac{6\pi}{3} \\ &\hline \frac{11\pi}{3} \end{aligned}$$

Q1

12. $\frac{23\pi}{4}$

$$\begin{aligned} &-\frac{8\pi}{4} \\ &-\frac{8\pi}{4} \\ &\hline \frac{7\pi}{4} \end{aligned}$$

Q4

13. -650°

$$\begin{aligned} &+360^\circ \\ &+360^\circ \end{aligned}$$

70°

70°

14. 1880°

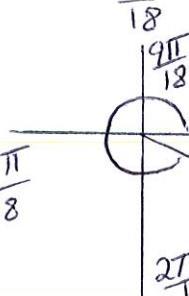
$$\begin{aligned} &-360^\circ \\ &-360^\circ \\ &-360^\circ \\ &-360^\circ \\ &-360^\circ \end{aligned}$$

80°

80°

15. $-\frac{39\pi}{18}$

$$\begin{aligned} &+ \frac{36\pi}{18} \\ &+ \frac{36\pi}{18} \\ &\hline \frac{33\pi}{18} \end{aligned}$$



$\frac{18\pi}{18}$

$\frac{2\pi}{18}$

$\frac{3\pi}{18}$

$\frac{4\pi}{18}$

$\frac{5\pi}{18}$

$\frac{6\pi}{18}$

$\frac{7\pi}{18}$

$\frac{8\pi}{18}$

$\frac{9\pi}{18}$

$\frac{10\pi}{18}$

$\frac{11\pi}{18}$

$\frac{12\pi}{18}$

$\frac{13\pi}{18}$

$\frac{14\pi}{18}$

$\frac{15\pi}{18}$

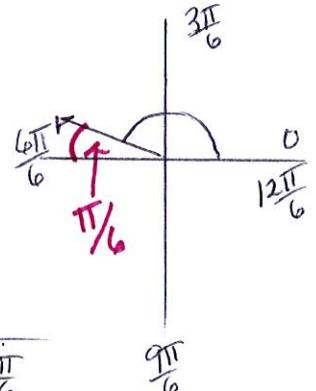
$\frac{16\pi}{18}$

$\frac{17\pi}{18}$

$\frac{18\pi}{18}$

16. $\frac{65\pi}{6}$

$$\begin{aligned} &- \frac{12\pi}{6} \\ &\hline \frac{5\pi}{6} \end{aligned}$$



Find a positive and a negative conterminal angle for the given angle.

$$17. -865^\circ$$

$$-505^\circ$$

$$215^\circ$$

$$18. 992^\circ$$

$$272^\circ$$

$$-88^\circ$$

$$19. \frac{55\pi}{4}$$

$$+ \frac{8\pi}{4} \text{ or } - \frac{8\pi}{4}$$

$$-\frac{\pi}{4}, \frac{7\pi}{4}$$

$$20. -\frac{69\pi}{45} + \frac{90\pi}{45}$$

$$- \frac{90\pi}{45}$$

$$\begin{array}{l} \frac{21\pi}{45}, -\frac{159\pi}{45} \\ \downarrow \quad \swarrow \\ \frac{7\pi}{15}, -\frac{53\pi}{15} \end{array}$$

Find the complement and supplement of each angle (if possible)

$$21. 64^\circ$$

$$22. 158^\circ$$

$$23. \frac{7\pi}{12}$$

$$24. \frac{11\pi}{18}$$

$$C: 26^\circ$$

$$C: NA$$

$$C: NA$$

$$C: NA$$

$$S: 116^\circ$$

$$S: 22^\circ$$

$$S: \frac{5\pi}{12}$$

$$S: \frac{7\pi}{18}$$

Convert to degree-decimal to the nearest thousandth (three decimal places)

$$25. 73^\circ 35'$$

$$26. -88^\circ 17' 55''$$

$$73.583^\circ$$

$$-88.299^\circ$$

Convert to DMS

$$27. 327.55^\circ$$

$$28. -366.15^\circ$$

$$327^\circ 33' 0''$$

$$-366^\circ 9' 0''$$