

Intro to Trig: Degrees p. 30

Sketch the following angles & name the quadrant:

- 310° Q IV
- 200° Q II
- 750° Q I
- 700° Q I

Aug 23-11:45 AM

Convert degrees between decimals & DMS p.31

D°M'S"
Degrees° Minutes' Seconds''

1 degree (like an hour) = 60 minutes
1 minute = 60 seconds
1 degree = 3600 seconds

Steps:
Type in degree (#)
2nd Apps DMS → Decimal
1: ° for degree
2: ' for minutes
Alpha + for seconds

Example 1 Convert -2°27'4". Round to the nearest thousandth.
 -2.451°

Example 2 Convert 74°8'14". Round to the nearest thousandth.
 74.137°

Steps:
Type in decimal degree (without degree symbol)
2nd Apps
4: ▶ DMS

Example 3 Convert 5.128° to DMS. Round to the nearest second.
 $5^\circ 7' 40.8'' \rightarrow 5^\circ 7' 41''$

Example 4 Convert 34.817° to DMS. Round to the nearest second.
 $34^\circ 49' 1.2'' \rightarrow 34^\circ 49' 1''$

Aug 23-11:51 AM

SKIP page 32 for now

Aug 23-12:01 PM

Insert graphic organizer

p. 33

Complementary angles - 2 angles whose sum is 90° or $\pi/2$ radiansSupplementary angles - 2 angles whose sum is 180° or π radians

Degrees

Radians

Find the complement & supplement of each.

1. 72° comp: $90^\circ - 72^\circ = 18^\circ$

Supp: $180^\circ - 72^\circ = 108^\circ$

2. 143° comp: none bc it's larger than 90°

Supp: $180^\circ - 143^\circ = 37^\circ$

Complementary & Supplementary Angles

Aug 23-12:01 PM

p. 33

next flap

Coterminal angles - angles that have the same initial & terminal side

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

Degrees

Radians

Find 1 positive & 1 negative coterminal angle of each.

1. 40°
 $+: 40^\circ + 360^\circ = 400^\circ$
 $-: 40^\circ - 360^\circ = -320^\circ$
2. -120°
 $+: -120^\circ + 360^\circ = 240^\circ$
 $-: -120^\circ - 360^\circ = -480^\circ$
3. 540°
 $+: 540^\circ + 360^\circ = 900^\circ$
 $-: 540^\circ - 360^\circ = 180^\circ \leftarrow \text{still positive}$
 $180^\circ - 360^\circ = -180^\circ$

Coterminal Angles

Aug 23-12:58 PM

p. 33

next flap

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

- *always positive
- *always less than 90° or $\pi/2$ radians

Reference triangles are drawn to the x-axis.

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).

Degrees

Radians

Find the reference angle of each.

1. 280°
 $360^\circ - 280^\circ = 80^\circ$
2. -590°
 $-590^\circ - (-360^\circ) = -230^\circ$
 $360^\circ - 230^\circ = 130^\circ$

Reference Angles

Aug 23-12:59 PM