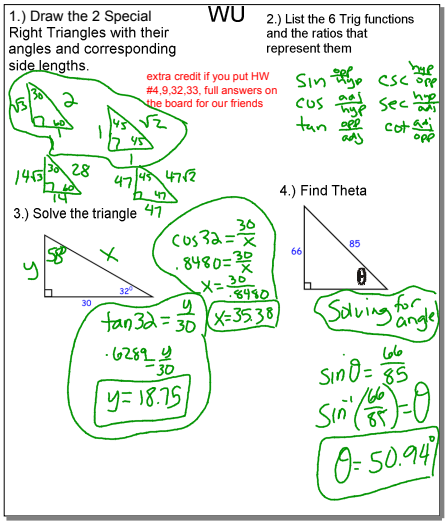
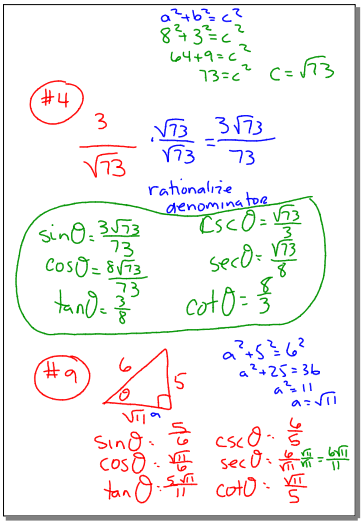
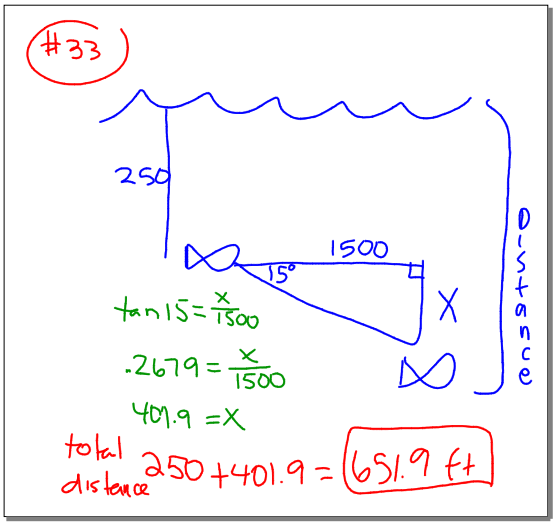


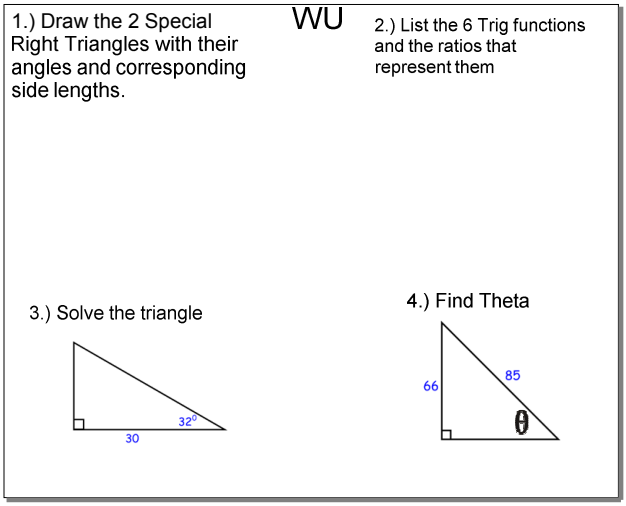
Feb 5-8:20 AM



Jan 7-1:25 PM



Jan 7-1:35 PM

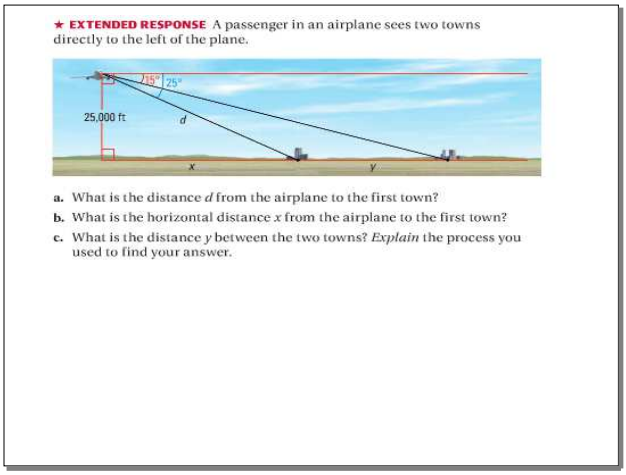


Feb 5-8:20 AM

HW REVIEW & DLT

What questions do you have from HW?

Feb 5-8:25 AM



Jan 4-2:42 PM

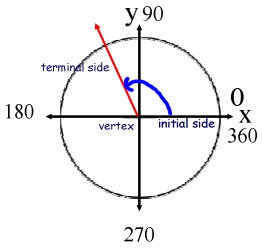
Look at notes you took from section 13.2

DO YOU HAVE ALL YOU NEED

Jan 4-2:43 PM

13.2 General Angles and Radian Measure

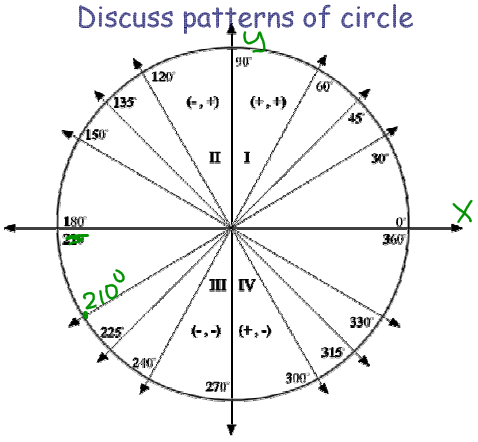
counterclockwise!!!!



An angle is in Standard Position if its vertex is at the origin and the initial side is the positive x axis

Mar 26-10:18 AM

Discuss patterns of circle

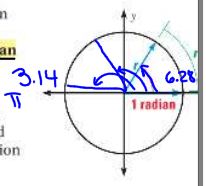


Mar 26-8:18 PM

Radian Measure

RADIAN MEASURE Angles can also be measured in *radians*. To define a radian, consider a circle with radius r centered at the origin as shown. One **radian** is the measure of an angle in standard position whose terminal side intercepts an arc of length r.

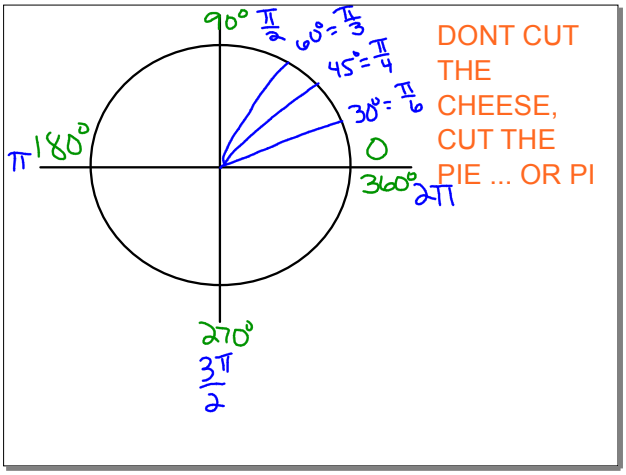
Because the circumference of a circle is $2\pi r$, there are 2π radians in a full circle. Degree measure and radian measure are therefore related by the equation $360° = 2\pi$ radians, or $180° = \pi$ radians.



YIKES - CAN YOU SAY CONFUSING...

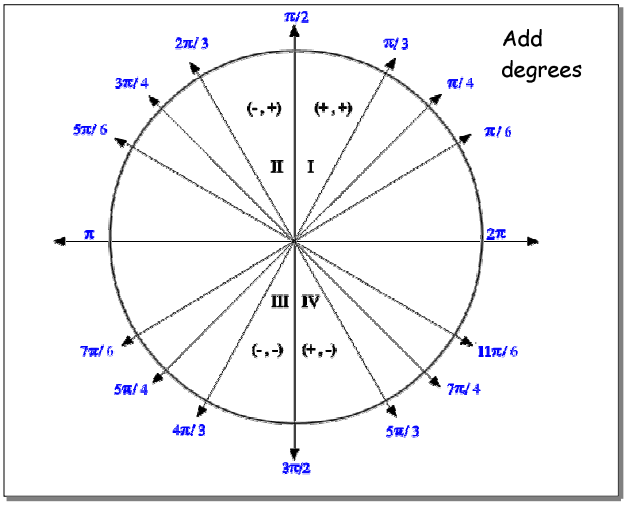
a radian is an angle created by stretching the length of the radius around the circumference of a circle

Mar 30-2:38 PM



DONT CUT THE CHEESE, CUT THE PIE ... OR PI

Jan 11-12:27 PM



Add degrees

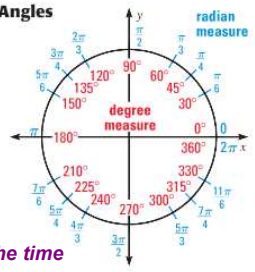
Mar 26-8:20 PM

CONCEPT SUMMARY *For Your Notebook*

Degree and Radian Measures of Special Angles

The diagram shows equivalent degree and radian measures for special angles from 0° to 360° (0 radians to 2π radians).

You may find it helpful to memorize the equivalent degree and radian measures of special angles in the first quadrant and for $90° = \frac{\pi}{2}$ radians. All other special angles are just multiples of these angles.



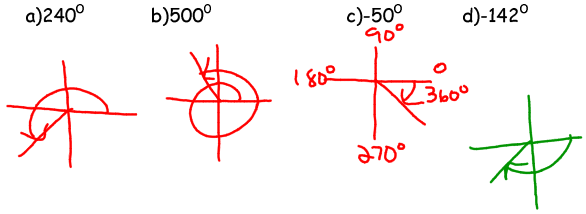
SNEAKY - it was in your book all the time

Mar 30-2:38 PM

1st job - draw angles in degrees & radians

Draw an angle with the given measure in standard position.

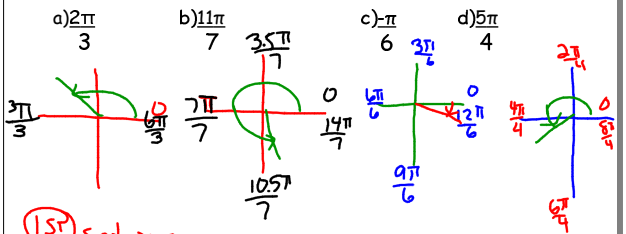
a)240° b)500° c)-50° d)-142°



Apr 6-8:23 AM

Draw an angle with the given measure in standard position.

a)$\frac{2\pi}{3}$ b)$\frac{11\pi}{7}$ c)$-\frac{\pi}{6}$ d)$\frac{5\pi}{4}$



1st Set our quadrants Use denom given

Jan 4-2:47 PM

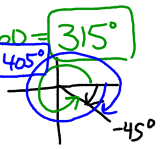
2nd job — Find coterminal angles

Coterminal angles are angles that have the same terminal sides.(end in the same place) You can find a coterminal angle by adding or subtracting multiples of 360 or 2π

ex. Find 1 positive and 1 negative coterminal angles to:

What if it said find "2" angles?

1. -45° + 360 = 315°
   -45 - 360 = -405°
2. -410°
3. 215°
4. 333°



-410 + 360 = -50

-50 + 360 = 310

-410 + 720

Jan 4-2:46 PM

2nd job continued

- ☐ −330°
- ☐ −435°
- ☐ 640°
- ☐ −442°

Jan 4-3:10 PM

2nd job Continued

$\pm 2\pi$ ± 360

5. $\frac{3\pi}{4}$ $2\pi = \frac{8\pi}{4}$ $\frac{3\pi}{4} + \frac{8\pi}{4} = \frac{11\pi}{4}$ $\frac{3\pi}{4} - \frac{8\pi}{4} = -\frac{5\pi}{4}$

6. $\frac{11\pi}{6}$ $2\pi = \frac{12\pi}{6}$ $\frac{11\pi}{6} + \frac{12\pi}{6} = \frac{23\pi}{6}$ $\frac{11\pi}{6} - \frac{12\pi}{6} = -\frac{1\pi}{6}$

7. $\frac{3\pi}{2}$ $2\pi = \frac{4\pi}{2}$ $\frac{3\pi}{2} + \frac{4\pi}{2} = \frac{7\pi}{2}$ $\frac{3\pi}{2} - \frac{4\pi}{2} = -\frac{\pi}{2}$

Sidebar

need common denominator to add / subtract fractions

Mar 30-2:43 PM

2nd job Continued

8. $\frac{11\pi}{3}$

9. $-\frac{35\pi}{18}$

Jan 4-3:08 PM

2nd job Continued

10. $\frac{15\pi}{4}$

11. $-\frac{19\pi}{12}$

Jan 4-11:29 AM

3rd job convert between degrees and radians..

KEY CONCEPT *For Your Notebook*

Converting Between Degrees and Radians ALWAYS REDUCE FRACTIONS

Degrees to radians	Radians to degrees
Multiply degree measure	Multiply radian measure
by $\frac{\pi}{180}$	by $\frac{180}{\pi}$

Mar 30-2:47 PM

3rd job continued Think no calculator...

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

1) 325° $\cdot \frac{\pi}{180} = \frac{325\pi}{180} = \frac{65\pi}{36}$

2) 60° $\cdot \frac{\pi}{180} = \frac{60\pi}{180} = \frac{\pi}{3}$

3) $-\frac{4\pi}{3}$ $\cdot \frac{180}{\pi} = -\frac{4\pi \cdot 180^{60}}{3\pi} = -240°$

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

5) 570°

6) −315°

Jan 4-2:54 PM

4th job Use your calculator...

1. $\tan\left(\frac{\pi}{7}\right) = .4816$ △ mode radian

2. $\cot\frac{\pi}{7} = \frac{1}{\tan\left(\frac{\pi}{7}\right)} = 2.0765$

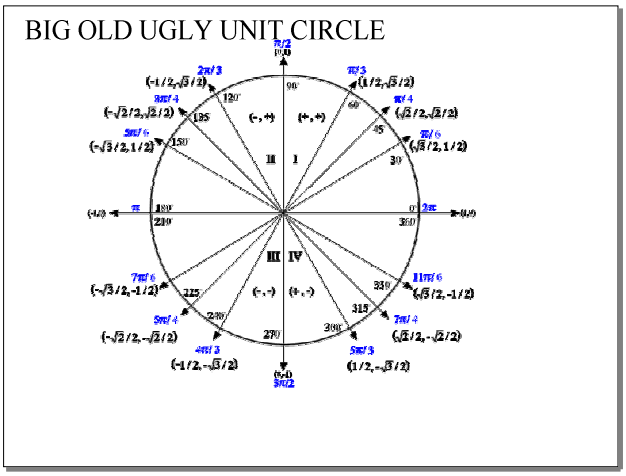
Sin Cos tan

csc sec cot

Jan 4-11:38 AM

(x, y) = cosine, sine

Jan 4-3:03 PM


BIG OLD UGLY UNIT CIRCLE
π/2
90°
2π/3
120°
(-1/2,√3/2)
π/3
60°
(1/2,√3/2)
3π/4
135°
(-√2/2,√2/2)
π/4
45°
(√2/2,√2/2)
5π/6
150°
(-√3/2,1/2)
π/6
30°
(√3/2,1/2)
II
I
π
180°
(-1,0)
0°
2π
360°
(1,0)
210°
III
IV
7π/6
(-√3/2,-1/2)
225°
(-,-)
(+,-)
330°
11π/6
(√3/2,-1/2)
5π/4
(-√2/2,-√2/2)
240°
315°
7π/4
(√2/2,-√2/2)
4π/3
(-1/2,-√3/2)
270°
300°
5π/3
(1/2,-√3/2)
3π/2

Mar 30-3:12 PM