WARM UP!

What are the zeros of $y = \frac{x^2 - 2x - 3}{x^2 + 5x - 14}$?

x intercept

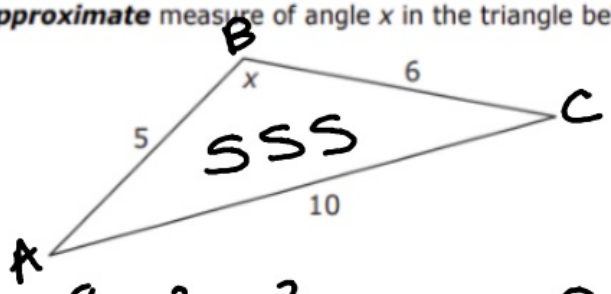
A 3 and $^-1$

B 1 and $^-3$

C 7 and $^-2$

D 2 and $^-7$

What is the ***approximate*** measure of angle x in the triangle below?



A 60.3°

B 80.4°

C 117.1°

D 130.5°

$b^2 = a^2 + c^2 - 2ac\cos B$

$10^2 = 6^2 + 5^2 - 2(6)(5)\cos B$

The Unit Organizer

NAME _____
DATE _____

④ BIGGER PICTURE: Precalc

② LAST UNIT/Experience: 4: Trigonometry

① CURRENT UNIT: 5: unit circle & its graphs

③ NEXT UNIT/Experience: 6: Analytic Tri
* graph in radian
* calculate in de

⑧ UNIT SCHEDULE
1 Basics of angles
2 unit circle
3 Graphs

⑤ UNIT MAP

how graphs are made from the unit circle
is about
- unit circle
- 6 trig graphs
  - sinθ
    - cscθ
  - cosθ
    - secθ
  - tanθ
    - cotθ

⑦ UNIT SELF-TEST QUESTION
① Can I analyze + graph all trigonometric functions?

⑨ UNIT RELATIONSHIPS
graph
convert
analyze

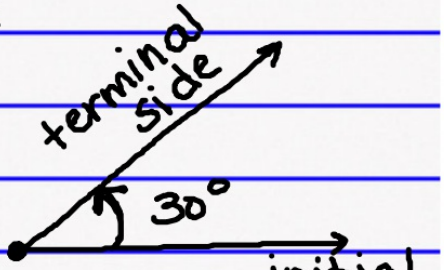
Objective 5.1

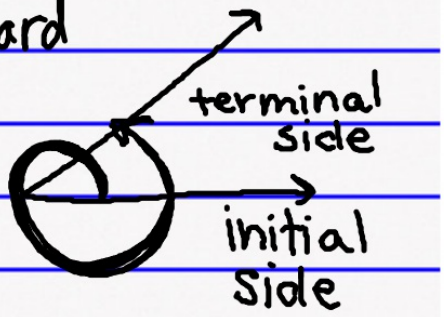
I can... use degrees & radians to measure angles on the Unit Circle

5.1 I can use degrees & radians to measure angles on the Unit Circle

Basics of Angles!

1. **Angles**: a measurement of the rotation of 2 rays around a central point.
2. **positive angles**: opens upward
3. **negative angles**: opens downward
4. **standard position**: when the angle starts on + X axis.

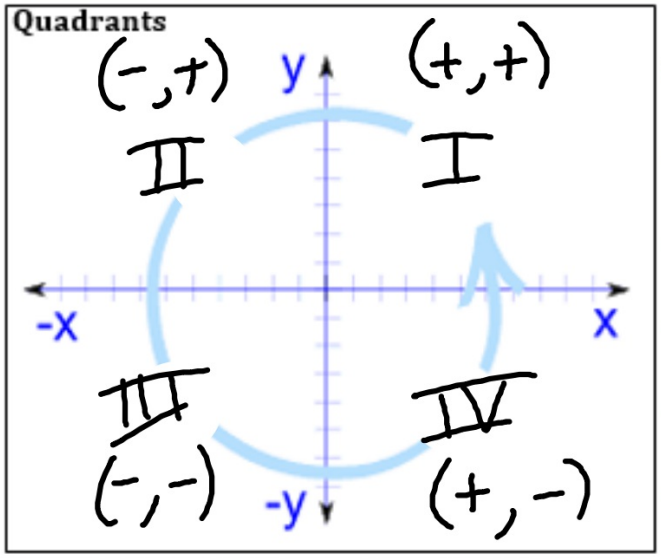


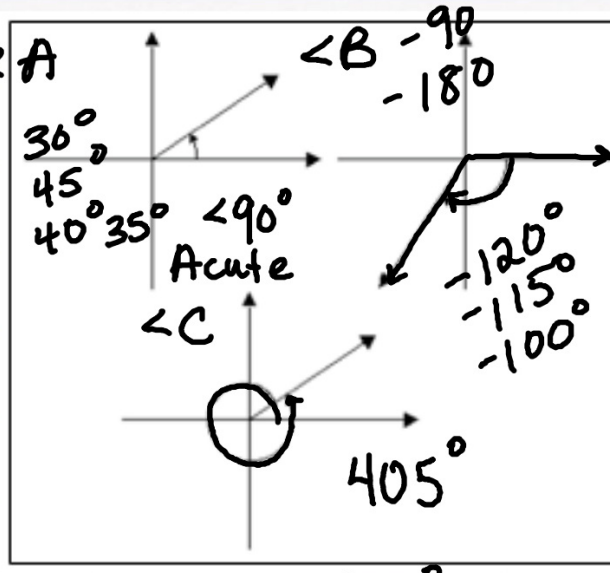


360° = 1 circle

Quadrants

Estimate these angles!





360°
+45°
405°

Radians & Degrees

5. A **degree** measures how large an angle is.

6. A **radian** is a type of measurement that uses the arc of a circle

math > fraction

7. The **Unit Circle** is a circle that has a **radius** of 1 unit.

Converting Rules

Degrees -> Rads

$$\frac{50^\circ}{1} \times \frac{\pi}{180} = \frac{50\pi}{180} = \frac{5\pi}{18}$$

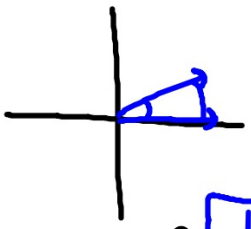
multiply by $\frac{\pi}{180}$

Rads -> Degrees

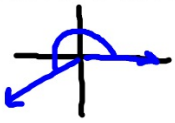
$$\frac{2\pi}{3} \times \frac{180}{\pi} = \frac{360}{3} = 120^\circ$$

multiply by $\frac{180}{\pi}$

Practice Converting!



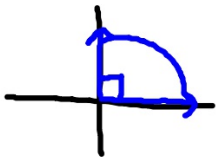
1. $30° = \frac{1\pi}{6}$ or $\frac{\pi}{6}$



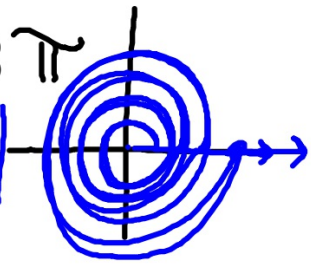
4. $\frac{7\pi}{6} = 210°$

7. $3\pi = 540°$

2. $90° = \frac{\pi}{2}$

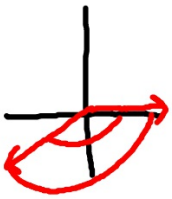


5. 8π $1440°$

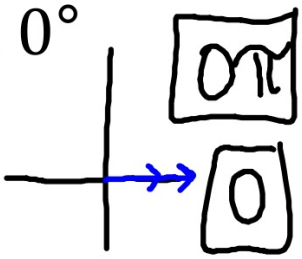


8. $720° = 4\pi$

3. $-135° \cdot \frac{\pi}{180} = \frac{-3\pi}{4}$



6. $0°$



9. -3π $-540°$

$\sin\theta$ - "sine" $\longleftrightarrow$ $\csc\theta$ - "cosecant"

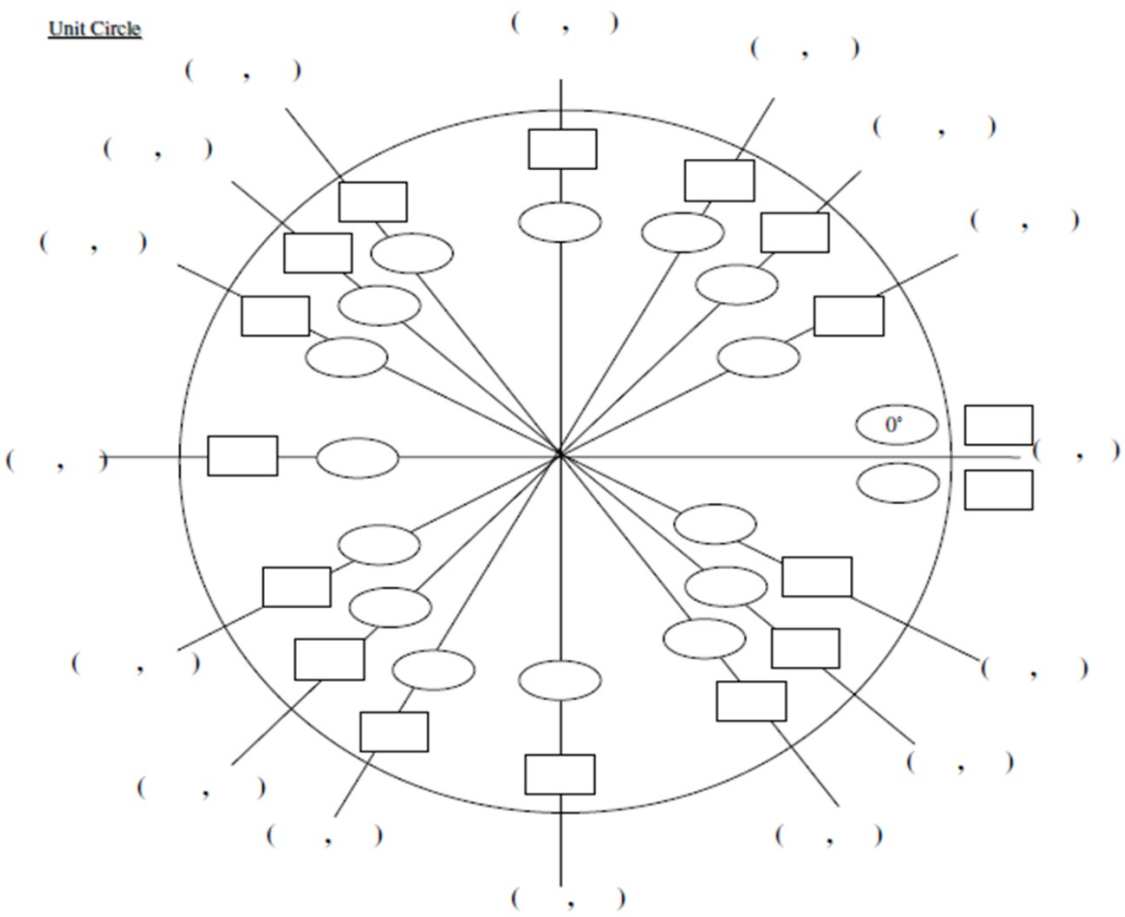
$\cos\theta$ - "cosine" $\longleftrightarrow$ $\sec\theta$ - "secant"

$\tan\theta$ - "tangent" $\longleftrightarrow$ $\cot\theta$ - "cotangent"

QUIZZIZ!

Take some time to review information about unit 4.

Unit Circle



Key

(,)

$Cos\theta, Sin\theta$

Degrees

Radians

Exit Problem

Explain the difference between a radian and a degree.