

Individual quiz Friday.
Ch.8 test will be part of final exam.

No calculator.

Memorize unit circle and radian values.

Memorize polar/rectangular formulas.

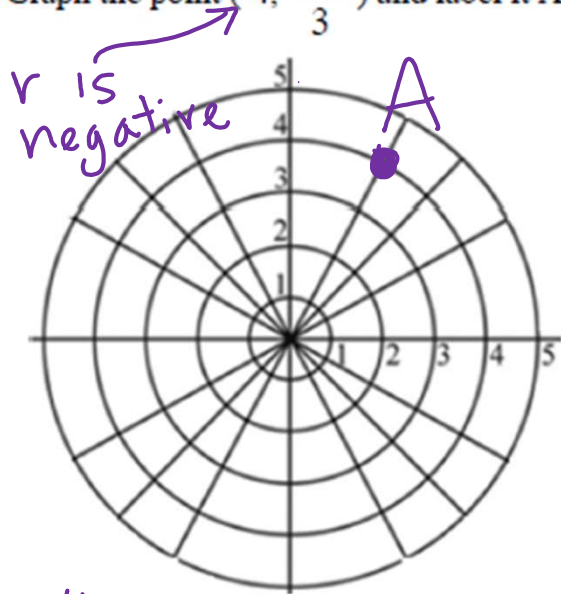
Check answers to review sheet#1:

Ch.8 Review#1—NO CALCULATOR!!

Name:

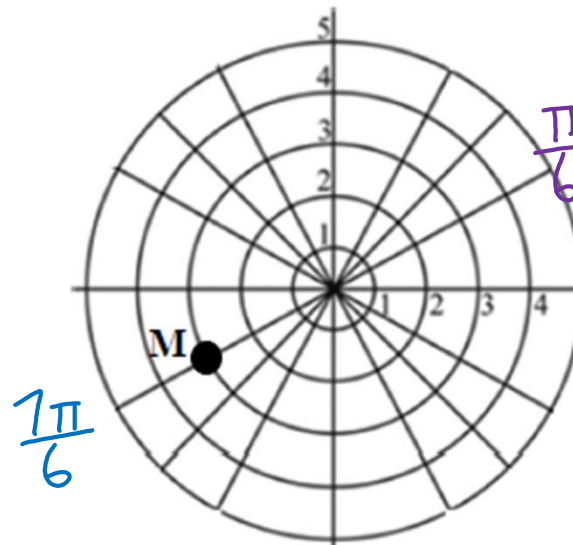
Per:

1. Graph the point $(-4, \frac{4\pi}{3})$ and label it A.



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

2. Fill in each blank to name four possible coordinates for point M. $-2\pi \leq \theta \leq 2\pi$



a. $(3, \frac{7\pi}{6})$

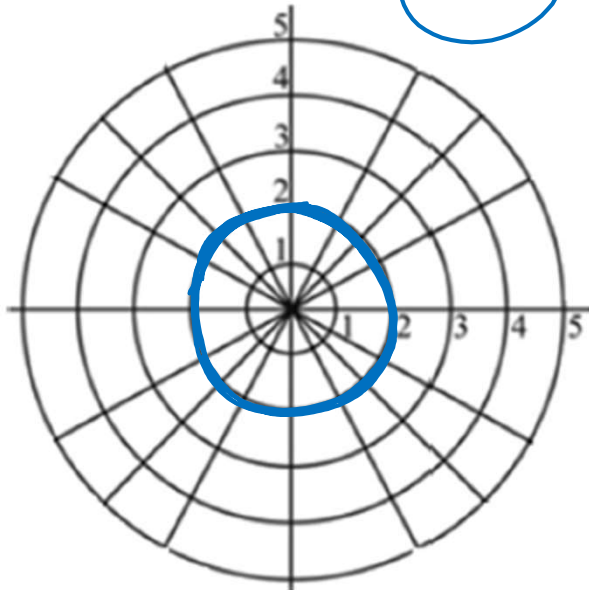
b. $(3, -\frac{5\pi}{6})$

c. $(-3, \frac{\pi}{6})$

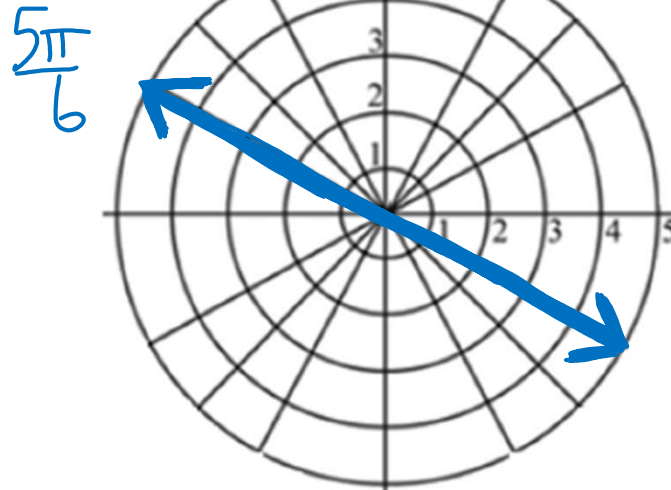
d. $(-3, -\frac{11\pi}{6})$

Check answers to review sheet#1:

3. Graph the polar equation $r = 2$



4. Graph the polar equation $\theta = \frac{5\pi}{6}$



CHECK ANSWERS

#2, 6-13

-1	0	1	
$-\frac{\sqrt{3}}{2}$		$\frac{\sqrt{2}}{2}$	
$-\frac{11\pi}{6}$	$-\frac{5\pi}{6}$	π	
$\frac{\pi}{6}$	$\frac{\pi}{6}$	$\frac{7\pi}{6}$	
$\frac{3\pi}{4}$	$\frac{5\pi}{4}$	$\frac{5\pi}{3}$	

Memorize unit circle and the given formulas:

CH. 8 PRACTICE FOR QUIZ (optional)

NAME:

PER:

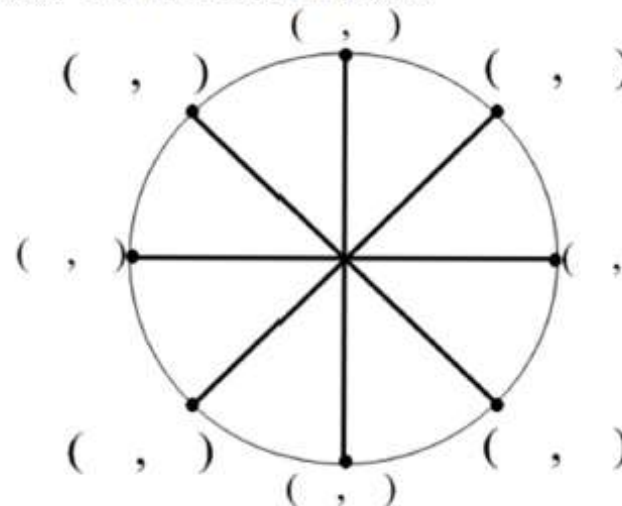
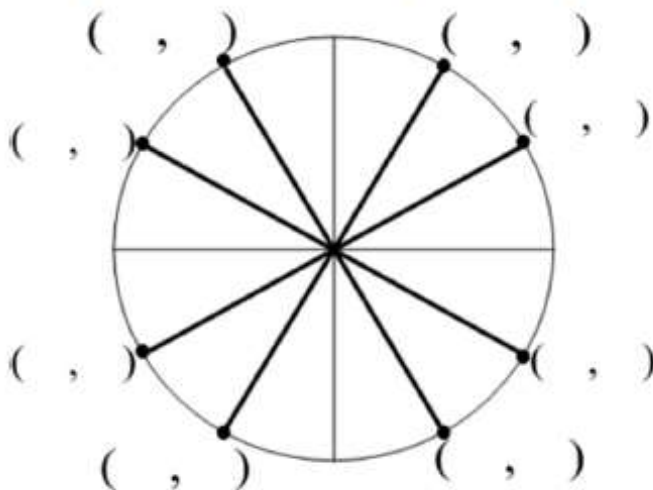
Label all radian values AND coordinates of each highlighted terminal point. NO CALCULATOR!!!!

Define each function in terms of x and y, based on the unit circle with $r = 1$:

$$\tan \theta =$$

$$\sin \theta =$$

$$\cos \theta =$$



Fill in the blanks to complete the following equations/expressions that you will use to answer quiz questions:

$$r = \sqrt{\quad + \quad} \quad r^2 = \quad + \quad$$

$$y = r \quad \quad x = r \quad \quad \tan \theta = \quad$$

$$\text{argument} = \quad$$

$$\text{modulus} = \quad$$

DeMoivre's Theorem:

$$[r(\cos\theta + i \sin\theta)]^n = \quad (\cos \quad \theta + i \sin \quad \theta)$$

Polar form of a complex number:

$$\quad (\cos\theta + i \quad)$$

Reminder: Bring a charged Chromebook to class on Friday for the Quiz!!

check ½ sheet practice for Quiz

CH. 8 PRACTICE FOR QUIZ (optional)

NAME:

PER:

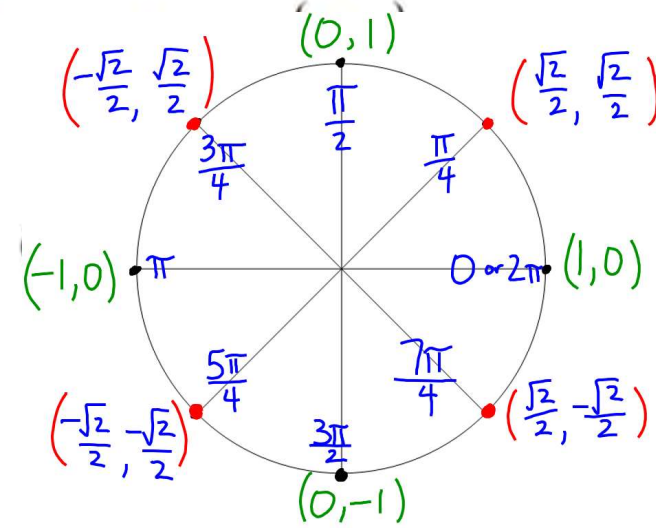
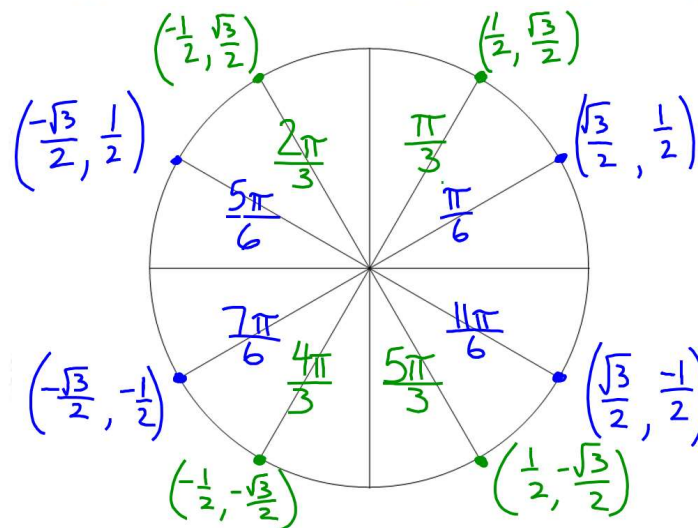
Label all radian values AND coordinates of each highlighted terminal point. NO CALCULATOR!!!!

Define each function in terms of x and y, based on the unit circle with $r = 1$:

$\tan \theta = \frac{y}{x}$

$\sin \theta = y$

$\cos \theta = x$



Fill in the blanks to complete the following equations/expressions that you will use to answer quiz questions:

$r = \sqrt{x^2 + y^2}$ $r^2 = x^2 + y^2$

$y = r \sin \theta$ $x = r \cos \theta$ $\tan \theta = \frac{y}{x}$

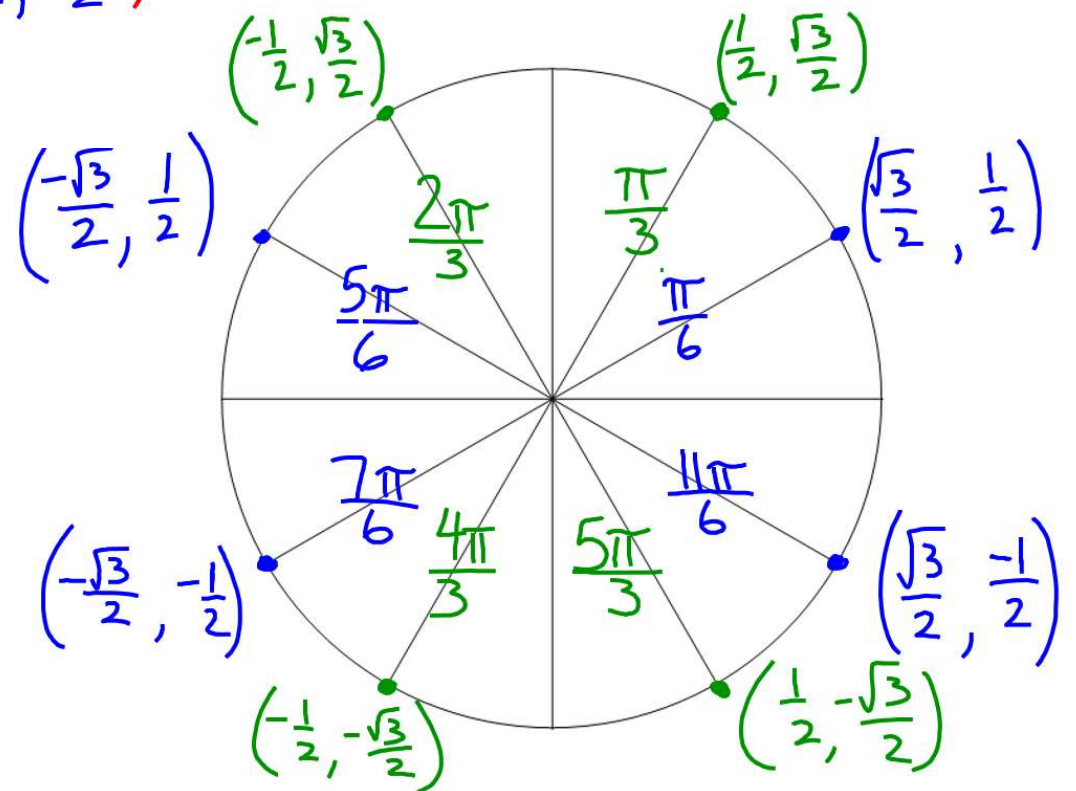
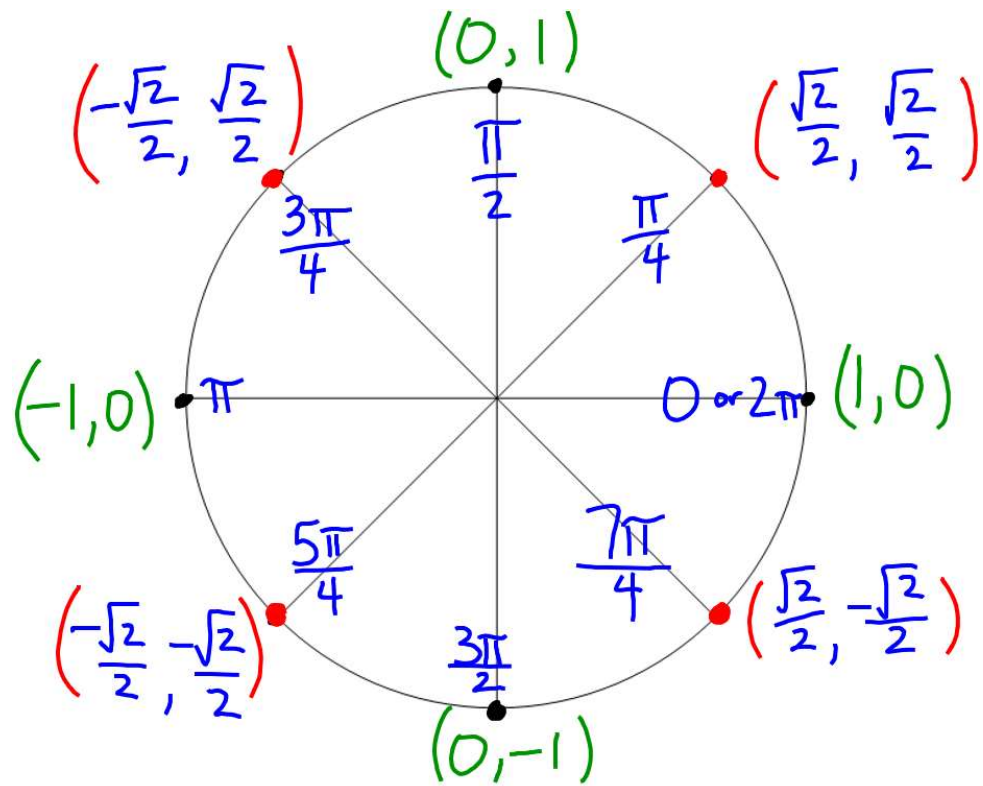
argument = θ

modulus = r

DeMoivre's Theorem:
 $[r(\cos \theta + i \sin \theta)]^n = r^n (\cos n\theta + i \sin n\theta)$

Polar form of a complex number:
 $r (\cos \theta + i \sin \theta)$

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Conversion from Polar Coordinates

to Rectangular Coordinates $(r, \theta) \rightarrow (x, y)$
polar *rectangular*

$$x = r \cos \theta, \quad y = r \sin \theta$$

Conversion from Rectangular

Coordinates to Polar Coordinates $(x, y) \rightarrow (r, \theta)$
rectangular *polar*

$$r = \sqrt{x^2 + y^2} \quad \text{or} \quad r^2 = x^2 + y^2$$

$$\tan \theta = \frac{y}{x}$$

$\theta = \text{argument}$
 $r = \text{modulus}$

Product of Complex Numbers in Polar Form

$$r_1(\cos \theta_1 + i \sin \theta_1) \cdot r_2(\cos \theta_2 + i \sin \theta_2)$$
$$= \underbrace{r_1 r_2}_{\text{modulus}} \left[\cos(\underbrace{\theta_1 + \theta_2}_{\text{argument}}) + i \sin(\theta_1 + \theta_2) \right]$$

Quotient of Complex Numbers in Polar Form

$$\frac{r_1(\cos \theta_1 + i \sin \theta_1)}{r_2(\cos \theta_2 + i \sin \theta_2)} =$$
$$= \frac{r_1}{r_2} \left[\cos(\theta_1 - \theta_2) + i \sin(\theta_1 - \theta_2) \right]$$

↑ modulus ↑ argument

De Moivre's Theorem

$$\left[r(\cos \theta + i \sin \theta) \right]^n =$$

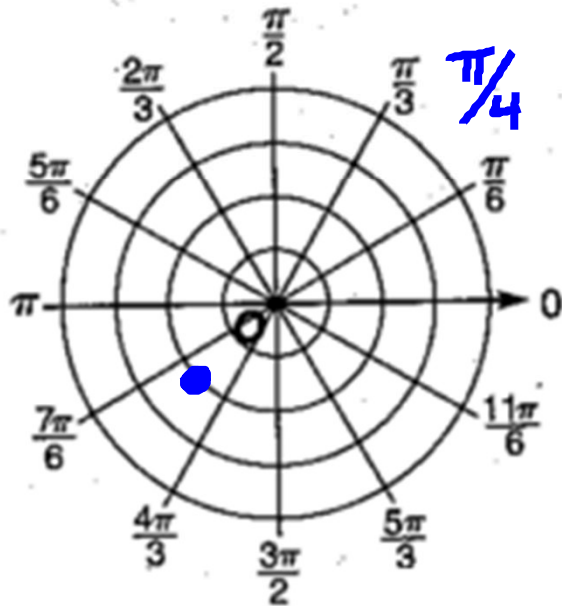
$$r^n (\cos n\theta + i \sin n\theta)$$

Be careful with order of operations. ↑ Multiply
 $n \cdot \theta$ first, then apply cosine & sine.

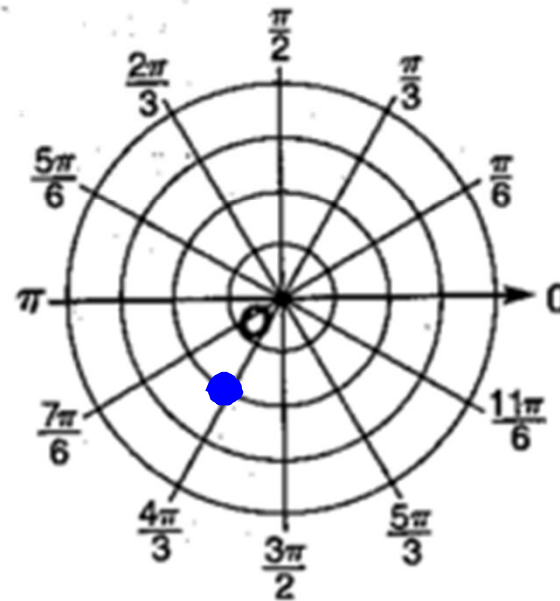
Check answers to Review #2

Graph each of the following. (section 9-1)

1. $(-2, \frac{\pi}{4})$

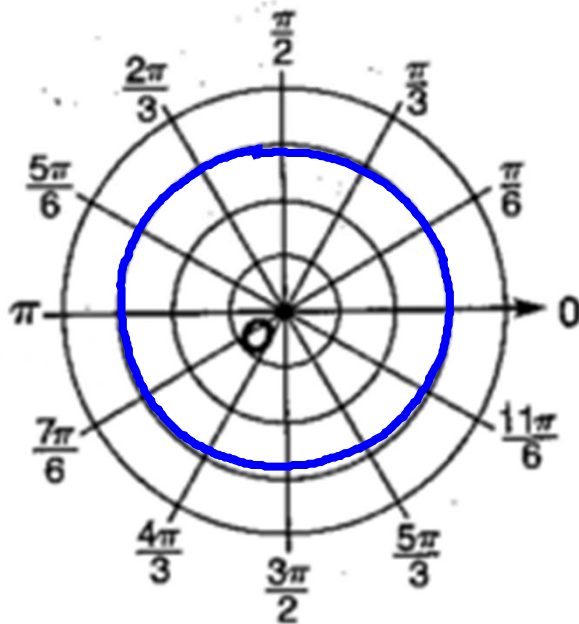


2. $(2, -\frac{2\pi}{3})$



Check answers to Review #2

3. $r = 3$



4. $\theta = \frac{-5\pi}{6}$

