

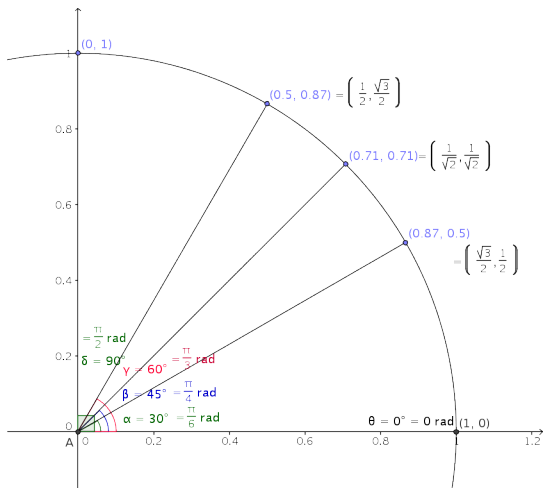
Math 112 Sample Chapter 5 Exam Fall 2009

Name Answers

Date _____

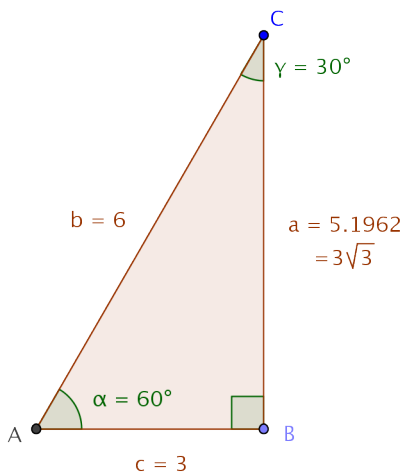
Please show ALL of your work if full or partial credit is desired. Communicating your solution is as important as stating your answer. Draw pretty pictures as often as possible. State exact answers unless otherwise noted. CHECK YOUR MODE!

- Label the five special angles and their x- and y- coordinates for the first quadrant and fill out the table.

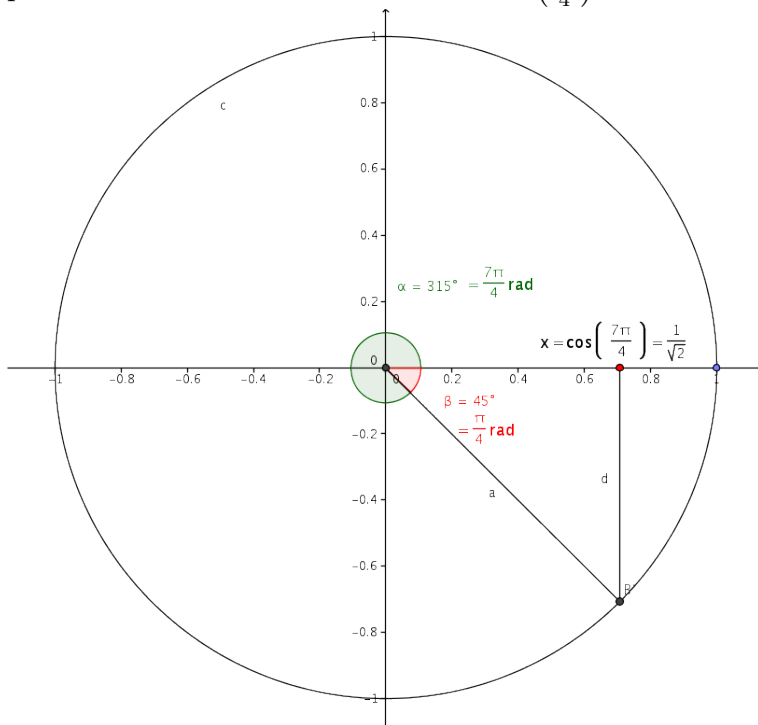


θ	$\cos(\theta)$	$\sin(\theta)$	$\tan(\theta)$
0 rad	1	0	0
$\frac{\pi}{6}$ rad	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\frac{1}{\sqrt{3}}$
$\frac{\pi}{4}$ rad	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1
$\frac{\pi}{3}$ rad	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\sqrt{3}$
$\frac{\pi}{2}$ rad	0	1	DNE

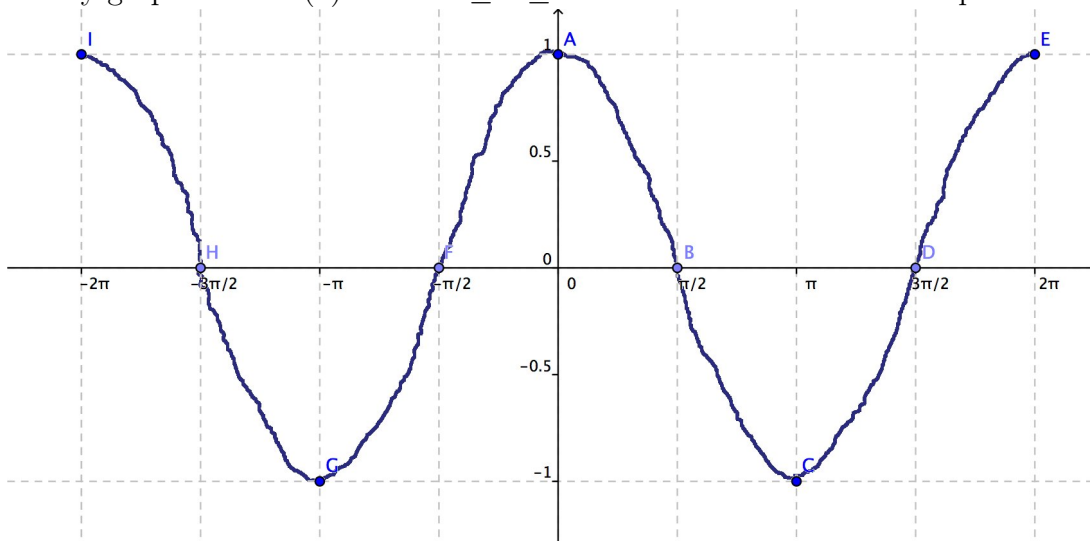
- Solve the right triangle, giving the missing sides and angles exactly.



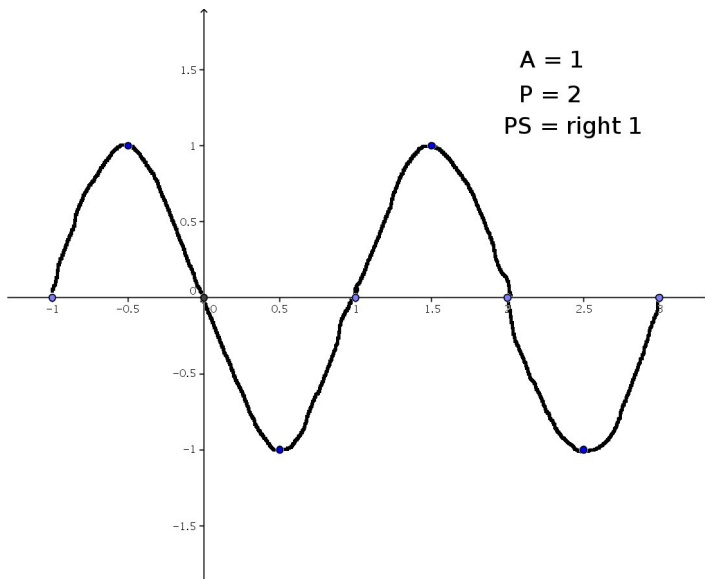
3. Use a reference angle to find the exact value of $\cos\left(\frac{7\pi}{4}\right)$. Do not use a calculator. Draw a picture on a unit circle that shows $\cos\left(\frac{7\pi}{4}\right)$.



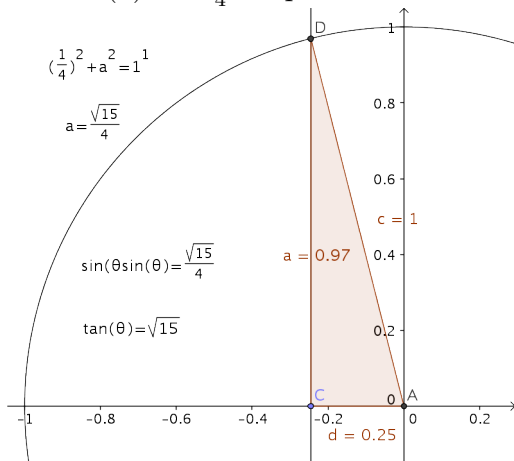
4. Neatly graph $x = \cos(\theta)$ for $-2\pi \leq \theta \leq 2\pi$. Plot and label at least 8 points.



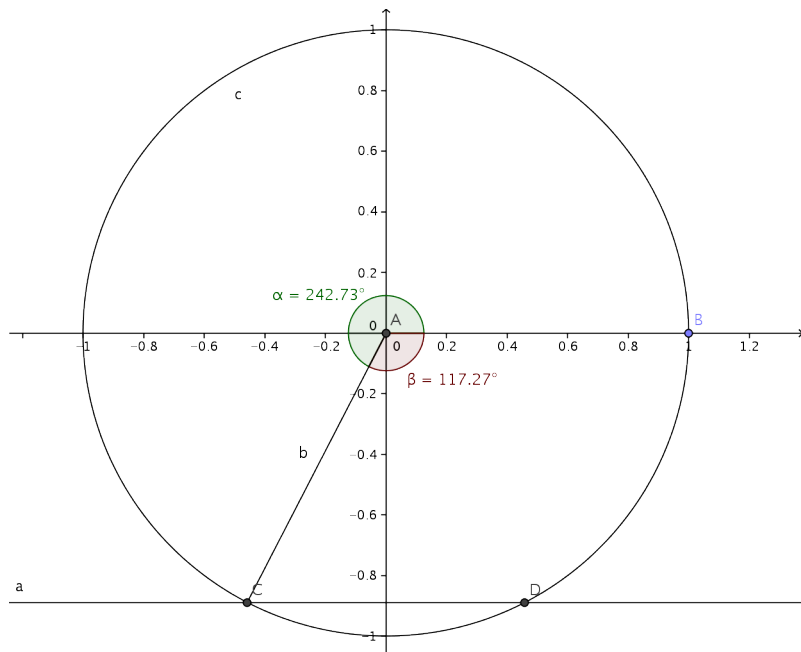
5. Neatly graph $y = \sin(\pi(\theta - 1))$. SHOW EXACTLY TWO PERIODS. Plot and label at least 8 points.



6. The $\cos(\theta) = -\frac{1}{4}$ in quadrant II. Find the EXACT values of the sine and tangent.



7. The $\sin(\theta) = -\frac{8}{9}$ in quadrant III. Find the value of θ to the nearest hundredth of a radian. Draw a picture!!



8. An amplifying tower is situated due west of a radio station. A receiver is 20 km south of the amplifying tower. From the receiver, the bearing to the station is $N70^{\circ}75'E$. How far is the amplifying tower from the station to the nearest meter? Draw a picture.