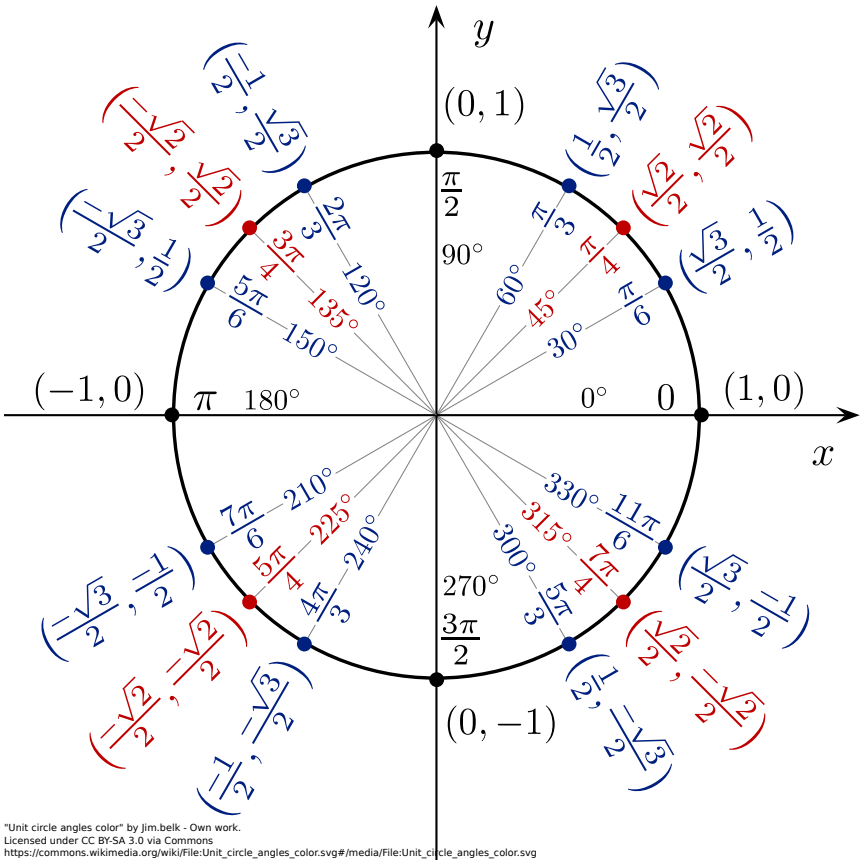
MATH 1121 - Fall 2015 - Dr. Clontz - Test 2

Name: _____ Section: MW 1100 (001) / TR 1530 (002)

- This test is worth 250 points toward your overall grade. Each problem is labeled with its value toward this total. Points earned beyond 250 will be counted as bonus.
- On multiple choice problems, you do not need to show your work. No partial credit will be given.
- On full response problems, show all of your work and give a complete solution. When in doubt, don't skip any steps. Partial credit will be given at the discretion of the instructor.
- This exam is open notes, provided that these notes are completely in your own handwriting. The professor may take up notes you use with your test and return them after the test is graded.
- Calculators are not necessary to solve any questions on the test and are not allowed. Notes on electronic devices must be approved by the instructor prior to the test day (e.g. for accomodations) and should be in airplane mode.
- Tests submitted after the end of 70 minutes will be deducted 25 points, with 25 more points deducted every following minute.

Trigonometric function defintions:

- $\sin\theta = \frac{opp}{hyp}$
- $\cos\theta = \frac{adj}{hyp}$
- $\tan\theta = \frac{opp}{adj} = \frac{\sin\theta}{\cos\theta}$
- $\csc\theta = \frac{hyp}{opp} = \frac{1}{\sin\theta}$
- $\sec\theta = \frac{hyp}{adj} = \frac{1}{\cos\theta}$
- $\cot\theta = \frac{adj}{opp} = \frac{1}{\tan\theta} = \frac{\cos\theta}{\sin\theta}$
- Points on the unit circle satisfy $(x, y) = (\cos\theta, \sin\theta)$:



Logrithmic Function Definition:

- $y = \log_b x$ is equivalent to $x = b^y$
- $y = \ln x$ is equivalent to $x = e^y$

Trigonometric/Exponential/Logrithmic Derivatives

$f(x)$	$f'(x)$
$\sin\theta$	$\cos\theta$
$\cos\theta$	$-\sin\theta$
$\tan\theta$	$\sec^2\theta$
$\cot\theta$	$-\csc^2\theta$
$\sec\theta$	$\sec\theta\tan\theta$
$\csc\theta$	$-\csc\theta\cot\theta$
$\log_b x$ or $\log_b \lvert x\rvert$	$\frac{1}{x}\log_b e$
$\ln x$ or $\ln \lvert x\rvert$	$\frac{1}{x}$
b^x	$b^x \ln b$
e^x	e^x

Trigonometric/Exponential/Logrithmic Integrals

$f(x)$	$\int f(x)\,dx$
$\cos\theta$	$\sin\theta + C$
$\sin\theta$	$-\cos\theta + C$
$\sec^2\theta$	$\tan\theta + C$
$\csc^2\theta$	$-\cot\theta + C$
$\sec\theta\tan\theta$	$\sec\theta + C$
$\csc\theta\cot\theta$	$-\csc\theta + C$
$\frac{1}{x}$	$\ln\lvert x\rvert + C$
e^x	$e^x + C$