

BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE

MATH 06 (JP)
Fall 2015

FOURTH EXAMINATION
(DAY) 2 HOURS

Print Name: _____

Directions: You *must* show all your work in the provided space for full credit. Simplify your answer whenever possible. Be certain to indicate your final answers clearly. Each problem is worth 10 points.

1. Convert from radians to degrees or viceversa:

(a) $\theta = 5\pi/4$

(b) $\theta = 11\pi/6$

(b) $\theta = 240^\circ$

2. Find the exact value of $\sin(\theta)$ and $\tan(\theta)$, for an angle θ in the second quadrant with known $\cos(\theta) = -\frac{5}{7}$.

4 Find the exact value for the following:

(a) $\tan(\pi/4)$

(b) $\sin(5\pi/4)$

(c) $\cos(11\pi/6)$

5. Sketch the graph of $y = -5 \cos(x)$ in the interval $-2\pi \leq x \leq 2\pi$. Find the Amplitude, the Period, the Step and the Phase Shift.

6. Verify the identity: $\sin^2(x) - \cos^2(x) = \frac{1 - \cot^2(x)}{1 + \cot^2(x)}$

7. The angle of elevation from a point in the ground to the top of a building is 56° . If the distance from the point on the ground to the base of the building is 300 feet. How high is the building?

8 Find the exact value for the following:

(a) $\sec(60^\circ) \tan(\pi/4)$

(b) $\sin(5\pi/4) + \cos(11\pi/6)$

9. Two sides of a right triangle are $a = 6$ and $b = 10$. Find the length of the hypotenuse and simplify your answer. Find the measure of all the angles in degrees.

10. Find all solutions between 0° and 360° of the equation $\cos(x) = -.123$