

Your TA: _____

Seat #: -

Math 105 TOPICS IN MATHEMATICS

QUIZ – XII (In-Class)

May 1 (Fri), 2015

Instructor: Yasuyuki Kachi

Line #: 52920.

ID # : _____

Name : _____

[I] (8pts) Find the following special values:

(1) $\sin 0 =$ _____ .

(5) $\cos \frac{\pi}{2} =$ _____ .

(2) $\sin \frac{\pi}{6} =$ _____ .

(6) $\sin \frac{2\pi}{3} =$ _____ .

(3) $\cos \frac{\pi}{4} =$ _____ .

(7) $\sin \pi =$ _____ .

(4) $\sin \frac{\pi}{3} =$ _____ .

(8) $\cos (2\pi) =$ _____ .

[II] (2pts) $(\cos x)^2 + (\sin x)^2 =$ _____ (a concrete number).

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[III] (4pts) Complete the formulas:

(1) $\sin(x + y) =$ _____
(in terms of $\sin x, \cos x, \sin y$ and $\cos y$).

(2) $\cos(x + y) =$ _____
(in terms of $\sin x, \cos x, \sin y$ and $\cos y$).

[IV] (4pts)

(1) $\int \cos x \, dx =$ _____, (2) $\int \sin x \, dx =$ _____.

[V] (4pts)

$$\cos x = 1 - \frac{1}{\boxed{}}x^2 + \frac{1}{\boxed{}}x^4 - \frac{1}{\boxed{}}x^6 + \frac{1}{\boxed{}}x^8 - \dots,$$

$$\sin x = \frac{1}{\boxed{}}x - \frac{1}{\boxed{}}x^3 + \frac{1}{\boxed{}}x^5 - \frac{1}{\boxed{}}x^7 + \dots.$$