Math 1316 Practice Test 3 - Calculator Part

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Complete the sentence so the result is an identity. Let x be any real number.

1) ___ - 1 = $\tan^2 x$ 1) _____

A) $\cot^2 x$ B) $\sin^2 x$ C) $\cos^2 x$ D) $\sec^2 x$

Write the expression in terms of sine and cosine, and simplify so that no quotients appear in the final expression.

2) $\tan^2\theta \csc^2\theta$ 2) _____

A) $\tan^2\theta$ B) $\sec^2\theta$ C) $\cos^3\theta$ D) $\sin\theta$

Perform the indicated operations and simplify the result so there are no quotients.

3) $\frac{\sin\theta}{1+\sin\theta} - \frac{\sin\theta}{1-\sin\theta}$ 3) _____

A) $\sin\theta\tan\theta$ B) $\sec\theta\csc\theta$ C) $-2\tan^2\theta$ D) $1+\cot\theta$

Use Identities to find the exact value.

4) $\cos\left(\frac{19\pi}{12}\right)$ 4) _____

A) $\sqrt{2} - \sqrt{6}$ B) $\frac{\sqrt{6}-\sqrt{2}}{4}$ C) $-\sqrt{6} - \sqrt{2}$ D) $\frac{\sqrt{2}-\sqrt{6}}{4}$

5) $\cos 36° \cos 24° - \sin 36° \sin 24°$ 5) _____

A) $\frac{1}{2}$ B) $\frac{\sqrt{2}}{2}$ C) $\frac{\sqrt{3}}{2}$ D) 1

Use identities to fill in the blank with the appropriate trigonometric function name.

6) $\tan 23° = \frac{1}{\_\_\_\_\_\ 67°}$ 6) _____

A) sec B) tan C) csc D) cot

Use a sum or difference identity to find the exact value.

7) $\frac{\tan 170° - \tan 50°}{1 + \tan 170° \tan 50°}$ 7) _____

A) $-\frac{\sqrt{3}}{3}$ B) $-\sqrt{3}$ C) -2 D) $-\frac{1}{2}$

Using a sum or difference identity, write the following as an expression involving functions of x.

8) $\sin(x + 45°)$ 8) _____

A) $\sin x$ B) $\frac{\sqrt{2}}{2}\cos x - \frac{\sqrt{2}}{2}\sin x$

C) $\frac{\sqrt{2}}{2}\cos x + \frac{\sqrt{2}}{2}\sin x$ D) $-\cos x$

Use an identity to write the expression as a single trigonometric function or as a single number.

9) $1 - 2\sin^2 2x$ 9) _____

A) $2 \sin 4x$ B) $\frac{1}{2} \sin 16x$ C) $\cos 8x$ D) $\cos 4x$

Use identities to find the indicated value for each angle measure.

10) $\tan \theta = \frac{4}{3}, \quad \pi < \theta < \frac{3\pi}{2}$ Find $\sin(2\theta)$. 10) _____

A) $\frac{7}{25}$ B) $-\frac{24}{25}$ C) $\frac{24}{25}$ D) $-\frac{7}{25}$

11) $\cos 2\theta = -\frac{3}{8}$ and $\frac{\pi}{2} < \theta < \pi$ Find $\sin \theta$. 11) _____

A) $\sin \theta = -\frac{\sqrt{11}}{4}$ B) $\sin \theta = 0$ C) $\sin \theta = \frac{\sqrt{11}}{4}$ D) $\sin \theta = \frac{4\sqrt{11}}{11}$

Determine all solutions of the equation in radians.

12) Find $\sin \frac{x}{2}$, given that $\sin x = \frac{1}{4}$ and x terminates in $0 < x < \frac{\pi}{2}$. 12) _____

A) $\frac{\sqrt{8 + 2\sqrt{15}}}{4}$ B) $\frac{\sqrt{6}}{4}$ C) $\frac{\sqrt{8 - 2\sqrt{15}}}{4}$ D) $\frac{\sqrt{10}}{4}$

Use an identity to write the expression as a single trigonometric function or as a single number.

13) $\frac{\sin 52°}{1 + \cos 52°}$ 13) _____

A) $\cos 26°$ B) $\sin 26°$ C) $\cot 26°$ D) $\tan 26°$

Use a calculator to find the value. Give answers as real numbers and round to 4 decimal places, if necessary.

14) $\sin(\arctan 2)$ 14) _____

A) -0.8172 B) Undefined C) 0 D) 0.8944

Give the exact value of the expression.

15) $\sin(\arctan 2)$ 15) _____

A) $\frac{5\sqrt{2}}{2}$ B) $5\sqrt{2}$ C) $2\sqrt{5}$ D) $\frac{2\sqrt{5}}{5}$

Answer Key
Testname: 1316-PRACTICETEST3-F17

1) D
2) B
3) C
4) B
5) A
6) B
7) B
8) C
9) D
10) C
11) C
12) C
13) D
14) D
15) D