

Student: _____
Date: _____
Time: _____

Instructor: Fred Khoury
Course: Math 2312-1000 Precalculus (Fall - 2015)
Book: Lial: College Algebra and Trigonometry, 4e

Assignment: Quiz Sec 3.2

1. Use an appropriate identity to find the exact value of the expression.

$$\sin\left(\frac{11\pi}{12}\right)$$

- ☐ A. $\frac{-\sqrt{2}(\sqrt{3}+1)}{4}$
- ☐ B. $\frac{\sqrt{2}(\sqrt{3}+1)}{4}$
- ☐ C. $\frac{-\sqrt{2}(\sqrt{3}-1)}{4}$
- ☐ D. $\frac{\sqrt{2}(\sqrt{3}-1)}{4}$

2. Use an appropriate identity to find the exact value of the expression.

$$\cos(165^\circ)$$

- ☐ A. $\frac{-\sqrt{2}(\sqrt{3}+1)}{4}$
- ☐ B. $\frac{\sqrt{2}(1+\sqrt{3})}{4}$
- ☐ C. $\frac{\sqrt{2}(\sqrt{3}-1)}{4}$
- ☐ D. $\frac{\sqrt{2}(1-\sqrt{3})}{4}$

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3. Use an appropriate identity to find the exact value of the expression.

$$\cos(-165^\circ)$$

- ☐ A. $\frac{\sqrt{2}(\sqrt{3}-1)}{4}$
- ☐ B. $\frac{\sqrt{2}(1+\sqrt{3})}{4}$
- ☐ C. $\frac{-\sqrt{2}(\sqrt{3}+1)}{4}$
- ☐ D. $\frac{\sqrt{2}(1-\sqrt{3})}{4}$

4. Find the exact value by using a sum or difference identity.

$$\cos\left(\frac{\pi}{5}\right)\cos\left(\frac{2\pi}{15}\right) - \sin\left(\frac{\pi}{5}\right)\sin\left(\frac{2\pi}{15}\right)$$

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

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5. Given the following, find the exact value of $\cos (A + B)$.

$$\cos (A) = \frac{1}{3}, \text{ with } A \text{ in quadrant I}$$

$$\sin (B) = -\frac{1}{2}, \text{ with } B \text{ in quadrant IV}$$

$$\sin (C) = \frac{1}{4}, \text{ with } C \text{ in quadrant II}$$

☐ A. $\frac{\sqrt{3} - 2\sqrt{2}}{6}$

☐ B. $\frac{2\sqrt{6} - 1}{6}$

☐ C. $\frac{\sqrt{3} + 2\sqrt{2}}{6}$

☐ D. $\frac{2\sqrt{6} + 1}{6}$

6. Given the following, find the exact value of $\sin (A - B)$.

$$\cos (A) = \frac{1}{3}, \text{ with } A \text{ in quadrant I}$$

$$\sin (B) = -\frac{1}{2}, \text{ with } B \text{ in quadrant IV}$$

$$\sin (C) = \frac{1}{4}, \text{ with } C \text{ in quadrant II}$$

☐ A. $\frac{\sqrt{3} + 2\sqrt{2}}{6}$

☐ B. $\frac{\sqrt{3} - 2\sqrt{2}}{6}$

☐ C. $\frac{2\sqrt{6} - 1}{6}$

☐ D. $\frac{2\sqrt{6} + 1}{6}$

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7. Given the following, find the exact value of $\tan (B + C)$.

$$\cos (A) = \frac{1}{3}, \text{ with } A \text{ in quadrant I}$$

$$\sin (B) = -1/2, \text{ with } B \text{ in quadrant IV}$$

$$\sin (C) = \frac{1}{4}, \text{ with } C \text{ in quadrant II}$$

-
- ☐ A. $\frac{4\sqrt{3} - \sqrt{15}}{11}$
- ☐ B. $-\frac{4\sqrt{3} + \sqrt{15}}{11}$
- ☐ C. $\frac{1 - 3\sqrt{5}}{8}$
- ☐ D. $\frac{1 + 3\sqrt{5}}{8}$
-

8. Find the exact value by using a sum or difference identity.

$$\tan (75^\circ)$$

-
- ☐ A. $\sqrt{3} + 2$
- ☐ B. $-\sqrt{3} - 2$
- ☐ C. $-\sqrt{3} + 2$
- ☐ D. $\sqrt{3} - 2$
-

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9. Find the exact value by using a sum or difference identity.

$$\sin \frac{11\pi}{12}$$

- ☐ A. $\frac{-\sqrt{2}(\sqrt{3}-1)}{4}$
- ☐ B. $\frac{-\sqrt{2}(\sqrt{3}+1)}{4}$
- ☐ C. $\frac{\sqrt{2}(\sqrt{3}+1)}{4}$
- ☐ D. $\frac{\sqrt{2}(\sqrt{3}-1)}{4}$

10. Find the exact value by using a sum or difference identity.

$$\tan (345^\circ)$$

- ☐ A. $-\sqrt{3}-2$
- ☐ B. $\sqrt{3}+2$
- ☐ C. $\sqrt{3}-2$
- ☐ D. $-\sqrt{3}+2$

11. Decide whether the equation is or is not an identity.

$$\sin (A+B) \sin (A-B)=\sin ^2 A-\sin ^2 B$$

- ☐ Not an identity
- ☐ Identity

12. Decide whether the equation is or is not an identity.

$$\sin (A+B)+\sin (A-B)=2 \sin A \cos B$$

- ☐ Not an identity
- ☐ Identity