

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

Use the fundamental identities to simplify the expression.

1)  $\frac{\tan \theta}{\cot \theta}$

A)  $\cos^3 \theta$

B)  $\tan^2 \theta$

C)  $\sec^2 \theta$

D)  $\sin \theta$

2)  $\frac{\cos^2 \theta}{\sin^2 \theta} + \csc \theta \sin \theta$

A)  $\sec^2 \theta$

B)  $\csc^2 \theta$

C)  $\tan^2 \theta$

D) 1

3)  $\csc \theta (\sin \theta + \cos \theta)$

A)  $1 + \cot \theta$

B)  $\sec \theta \csc \theta$

C)  $-2 \tan^2 \theta$

D)  $\sin \theta \tan \theta$

4)  $\frac{(\sin \theta + \cos \theta)^2}{1 + 2 \sin \theta \cos \theta}$

A)  $-\sec^2 \theta$

B) 0

C) 1

D)  $1 - \sin \theta$

5)  $\frac{\csc \theta \cot \theta}{\sec \theta}$

A)  $\cot^2 \theta$

B)  $\sec^2 \theta$

C)  $\csc^2 \theta$

D) 1

6)  $\sin^2 \theta + \tan^2 \theta + \cos^2 \theta$

A)  $\sin \theta$

B)  $\sec^2 \theta$

C)  $\cos^3 \theta$

D)  $\tan^2 \theta$

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

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

8)  $\sin 15^\circ$

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

Use trigonometric identities to find the exact value.

9)  $\sin 10^\circ \cos 50^\circ + \cos 10^\circ \sin 50^\circ$

A)  $\frac{\sqrt{3}}{3}$

B)  $\frac{1}{6}$

C)  $\frac{\sqrt{3}}{2}$

D)  $\frac{1}{2}$

10)  $\cos (310^\circ) \cos (50^\circ) - \sin (310^\circ) \sin (50^\circ)$

A) 0

B)  $\frac{\sqrt{2}}{2}$

C) -1

D) 1

11)  $\frac{\tan 155^\circ - \tan 35^\circ}{1 + \tan 155^\circ \tan 35^\circ}$

A)  $-\sqrt{3}$

B)  $-2$

C)  $-\frac{\sqrt{3}}{3}$

D)  $-\frac{1}{2}$

**Find the exact value of the expression using the provided information.**

14) Find  $\cos(B + C)$  given that  $\sin B = -\frac{1}{2}$ , with B in quadrant IV, and  $\sin C = \frac{1}{4}$ , with C in quadrant II.

15) Find  $\sin(A - B)$  given that  $\cos A = \frac{1}{3}$ , with A in quadrant I, and  $\sin B = -\frac{1}{2}$ , with B in quadrant IV.