NAME:_____

1. 010915b
The expression $\cot\theta \cdot \sec\theta$ is equivalent to

[A] $\csc\theta$ [B] $\frac{\sin\theta}{\cos^2\theta}$

[C] $\sin\theta$ [D] $\frac{\cos\theta}{\sin^2\theta}$

2. 060610b
The expression $\frac{1-\cos^2 x}{\sin^2 x}$ is equivalent to

[A] 1 [B] $\cos x$ [C] $\sin x$ [D] -1

3. 010608b
The expression $(1 + \cos x)(1 - \cos x)$ is equivalent to

[A] 1 [B] $\sec^2 x$

[C] $\sin^2 x$ [D] $\csc^2 x$

4. 080813b
The expression $1-\sec x$ is equivalent to

[A] $\frac{\cos x-1}{\cos x}$ [B] $-\tan x$

[C] $\frac{\sin x-1}{\sin x}$ [D] $\frac{\tan x}{\sec x-1}$

5. 060812b
The expression $\cos^2 4\theta+\sin^2 4\theta$ is equivalent to

[A] $\cos\theta$ [B] $\cos 8\theta$ [C] 2 [D] 1

6. 080526b
Express in simplest terms: $\frac{2-2\sin^2 x}{\cos x}$

7. 060720b
The expression $\sin A+\frac{\cos^2 A}{\sin A}$ is equivalent to

[A] 1 [B] $\sec A$

[C] $\csc A$ [D] $\sin A$

8. 060418b
If θ is a positive acute angle and $\sin\theta = a$, which expression represents $\cos\theta$ in terms of a?

[A] $\frac{1}{\sqrt{a}}$ [B] $\sqrt{1-a^2}$

[C] $\frac{1}{\sqrt{1-a^2}}$ [D] $\sqrt{a}$

9. 010508b
The expression $\frac{\tan\theta}{\sec\theta}$ is equivalent to

[A] $\frac{\sin\theta}{\cos^2\theta}$ [B] $\frac{\cos^2\theta}{\sin\theta}$

[C] $\cos\theta$ [D] $\sin\theta$

10. 010402b
The expression $\frac{\sec\theta}{\csc\theta}$ is equivalent to

[A] $\frac{\sin\theta}{\cos\theta}$ [B] $\cos\theta$

[C] $\sin\theta$ [D] $\frac{\cos\theta}{\sin\theta}$

11. 060515b
A crate weighing w pounds sits on a ramp positioned at an angle of θ with the horizontal. The forces acting on this crate are modeled by the equation $Mw\cos\theta = w\sin\theta$, where M is the coefficient of friction. What is an expression for M in terms of θ?

[A] $M = \cot\theta$ [B] $M = \csc\theta$

[C] $M = \tan\theta$ [D] $M = \sec\theta$

[1] A

[2] A

[3] C

[4] A

[5] D

[6] [2] $2\cos x$, and appropriate work is shown, such as factoring the numerator and substituting $\cos^2 x$ for $1-\sin^2 x$.
[1] Appropriate work is shown, but one factoring or substitution error is made, or the expression is not simplified completely.
or [1] Appropriate work is shown, but one conceptual error is made.
or [1] $2\cos x$, but no work is shown.
[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously incorrect procedure.

[7] C

[8] B

[9] D

[10] A

[11] C