

A2.A.58: Know and apply the co-function and reciprocal relationships between trigonometric ratios

1. 010911b, P.I. A2.A.58

What is a value of $\text{Arc sin}(-\frac{\sqrt{2}}{2})$?

[A] $\frac{\pi}{2}$ [B] $\frac{\pi}{4}$ [C] $-\frac{\pi}{4}$ [D] $-\frac{\pi}{2}$

2. 080817b, P.I. A2.A.58

What is the value of $\csc(\text{Arc sin} \frac{3}{4})$?

[A] $\frac{4}{\sqrt{7}}$ [B] $\frac{\sqrt{7}}{4}$ [C] $\frac{3}{4}$ [D] $\frac{4}{3}$

3. 080703b, P.I. A2.A.58

If $\csc \theta = -2$, what is the value of $\sin \theta$?

[A] $-\frac{1}{2}$ [B] -2 [C] 2 [D] $\frac{1}{2}$

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4. 060904b, P.I. A2.A.58

If $\sin x = \frac{1}{a}$, $a \neq 0$, which statement must be true?

[A] $\sec x = -\frac{1}{a}$ [B] $\sec x = a$

[C] $\csc x = a$ [D] $\csc x = -\frac{1}{a}$

5. 060302b, P.I. A2.A.58

If $\sin \theta > 0$ and $\sec \theta < 0$, in which quadrant does the terminal side of angle θ lie?

[A] II [B] IV [C] I [D] III

6. 080410b, P.I. A2.A.58

If the tangent of an angle is negative and its secant is positive, in which quadrant does the angle terminate?

[A] I [B] III [C] II [D] IV

7. 060609b, P.I. A2.A.58

If $\tan \theta = 2.7$ and $\csc \theta < 0$, in which quadrant does θ lie?

[A] I [B] III [C] IV [D] II

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8. 080813b, P.I. A2.A.58

The expression $1 - \sec x$ is equivalent to

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

9. 010508b, P.I. A2.A.58

The expression $\frac{\tan \theta}{\sec \theta}$ is equivalent to

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

10. 010402b, P.I. A2.A.58

The expression $\frac{\sec \theta}{\csc \theta}$ is equivalent to

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

11. 060720b, P.I. A2.A.58

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

- [A] 1 [B] $\sec A$
[C] $\sin A$ [D] $\csc A$

12. 060515b, P.I. A2.A.58

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

13. 010320b, P.I. A2.A.58

If $\sin 6A = \cos 9A$, then $m\angle A$ is equal to

- [A] 6 [B] $1\frac{1}{2}$ [C] 36 [D] 54

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- [1] C
- [2] D
- [3] A
- [4] C
- [5] A
- [6] D
- [7] B
- [8] B
- [9] D
- [10] D
- [11] D
- [12] B
- [13] A