

For Problem 1-6, use:

$(-4, -3)$ is on the terminal side of A and
 $180^\circ \leq A \leq 270^\circ$

$\sec B = 17/8$ and $0^\circ \leq B \leq 90^\circ$; and

$\cot C = 12/5$ and $-180^\circ \leq C \leq -90^\circ$

to find the exact values of:

1. $\sin(A-B)$

4. $\csc(A+B)$

2. $\cos(2A)$

5. $\tan(2B)$

3. $\tan \frac{1}{2}C$

6. $\cos \frac{1}{2}A$

7. Prove: $\frac{2\sin^2 w - 5\cos w + 1}{6\sin^2 w - 5\cos w - 2} = \frac{\cos w + 3}{3\cos w + 4}$

9. Solve exactly for A: $\cos^4 A - \sin^4 A = 1$

8. Prove:
 $\sin(A + B)\sin(A - B) = \sin^2 A - \sin^2 B$

10. Solve exactly for $x \in [0, \pi)$:

$$\frac{\tan \frac{1}{2}x + \cot \frac{1}{2}x}{\cot \frac{1}{2}x - \tan \frac{1}{2}x} = 2$$

For Problem 1-6, use:

$(-4, -3)$ is on the terminal side of A and
 $180^\circ \leq A \leq 270^\circ$

$\sec B = 17/8$ and $0^\circ \leq B \leq 90^\circ$; and

$\cot C = 12/5$ and $-180^\circ \leq C \leq -90^\circ$

to find the exact values of:

1. $\cos (A-B)$

4. $\tan (A+B)$

2. $\sin 2B$

5. $\cot 2A$

3. $\sin \left(\frac{1}{2} C \right)$

6. $\sec \left(\frac{1}{2} B \right)$

7. Prove:

$$\frac{\cos(A+2B)\cos(B) + \sin(A+2B)\sin(B)}{\sin A \cos B + \cos A \sin B} = \frac{1 - \tan A \tan B}{\tan A + \tan B}$$

8. Solve for x :

$$\sec\left(x - \frac{\pi}{4}\right) = 2 + 2\sec\left(x - \frac{\pi}{4}\right)$$

9. Prove: $\tan x \sin 2x - 2 \cos^2 x = -2 \cos 2x$

10. Solve for $A \in (-2\pi, 2\pi)$:

$$\left(\sin \frac{1}{2}A - \cos \frac{1}{2}A\right)^2 = \frac{1}{2}$$

For Problem 1-6, use:

$(-4, -3)$ is on the terminal side of A and
 $180^\circ \leq A \leq 270^\circ$

$\sec B = 17/8$ and $0^\circ \leq B \leq 90^\circ$; and

$\cot C = 12/5$ and $-180^\circ \leq C \leq -90^\circ$

to find the exact values of:

1. $\tan (A-B)$

2. $\cot 2B$

3. $\csc \left(\frac{1}{2} C \right)$

4. $\cos (A+C)$

5. $\csc 2C$

6. $\sin \left(\frac{1}{2} B \right)$

7. Prove: $\frac{\cos^4 \phi - \sin^4 \phi}{\sin \phi \cos \phi} = \frac{1 - \tan^2 \phi}{\tan \phi}$

9. Solve exactly for $x \in [0, \pi)$:
 $\tan 3x - \tan x + \tan 3x \tan x = -1$

8. Prove: $2 \cot f = \cot \frac{f}{2} - \tan \frac{f}{2}$

10. Solve exactly for x : $\frac{1 - \tan x \tan \frac{\pi}{12}}{\tan x + \tan \frac{\pi}{12}} = \sqrt{3}$

For Problem 1-6, use:

$(-4, -3)$ is on the terminal side of A and
 $180^\circ \leq A \leq 270^\circ$

$\sec B = 17/8$ and $0^\circ \leq B \leq 90^\circ$; and

$\cot C = 12/5$ and $-180^\circ \leq C \leq -90^\circ$

to find the exact values of:

1. $\csc(A-B)$

4. $\sin(B+C)$

2. $\sin 2A$

5. $\cos 2C$

3. $\cos\left(\frac{1}{2}C\right)$

6. $\cot\left(\frac{1}{2}A\right)$

7. Prove: $\sin^2 \theta \tan \frac{\theta}{2} = \sin \theta - \sin \theta \cos \theta$

9. Prove: $\frac{\sec \theta}{\cot \theta + \tan \theta} = \sin \theta$

8. Solve for $x \in [-2\pi, 2\pi]$:
 $3 - 3\sin x - 2\cos^2 x = 0$

10. Solve for x :
 $\left(\cos^2 \frac{1}{2}x - \sin^2 \frac{1}{2}x\right)^2 - \left(2\sin \frac{1}{2}x \cos \frac{1}{2}x\right)^2 = \frac{1}{2}$