

Verify that each equation is an identity. Show all your work on a separate sheet of paper.

1)  $\cos \theta \tan \theta = \sin \theta$

2)  $\sin \theta \cot \theta = \cos \theta$

3)  $\tan \theta \csc \theta \cos \theta = 1$

4)  $\sin \theta = \frac{\tan \theta \cot \theta}{\csc \theta}$

5)  $\tan \theta = \frac{\cos \theta \sec \theta}{\cot \theta}$

6)  $\frac{\sec \theta}{\csc \theta} = \tan \theta$

7)  $\frac{\sec^2 \theta - 1}{\sec^2 \theta} = \sin^2 \theta$

8)  $\cos \theta = \frac{\cot \theta}{\csc \theta}$

9)  $\sin \theta \sec \theta = \tan \theta$

10)  $\cot \theta \sec \theta \sin \theta = 1$

11)  $\cot \theta = \cos \theta \csc \theta$

12)  $\frac{1 + \tan^2 \theta}{\csc \theta \sec \theta} = \tan \theta$

13)  $\frac{\csc \theta \tan \theta}{1 + \tan^2 \theta} = \cos \theta$

14)  $\tan \theta \sin \theta + \cos \theta = \sec \theta$

15)  $\tan \theta \csc \theta \cos \theta = 1$

16)  $\frac{\tan \theta}{\sec \theta} = \sin \theta$

17)  $\sin \theta \cos \theta \sec \theta \cot \theta = \cos \theta$

18)  $\sin \theta \cos \theta \tan \theta + \cos^2 \theta = 1$

19)  $\cos \theta \cot \theta = \csc \theta - \sin \theta$

20)  $\frac{\sin^2 \theta + \cos^2 \theta}{\tan^2 \theta + 1} = \cos^2 \theta$

21)  $\csc \theta - \cot \theta \cos \theta = \sin \theta$

22)  $(\sec \theta - \tan \theta)(1 + \sin \theta) = \cos \theta$

23)  $(1 + \cos \theta)(\csc \theta - \cot \theta) = \sin \theta$

24)  $\sec \theta \csc \theta = \tan \theta + \cot \theta$

25)  $\sec^2 \theta - \tan \theta \cot \theta = \tan^2 \theta$

26)  $\frac{\sin \theta}{\csc \theta} + \frac{\cos \theta}{\sec \theta} = \csc^2 \theta - \cot^2 \theta$

27)  $\cot \theta \cos \theta + \sin \theta = \csc \theta$