~Key~

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

$\cos\theta \cdot \dfrac{\sin\theta}{\cos\theta} = \sin\theta$

$\sin\theta = \sin\theta$ ✓

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2) $\dfrac{\sin\theta \cdot \cos\theta}{\sin\theta} = \cos\theta$

$\cos\theta = \cos\theta$ ✓

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3) $\dfrac{\sin\theta}{\cos\theta} \cdot \dfrac{1}{\sin\theta} \cdot \dfrac{\cos\theta}{1} = 1$

$1 = 1$

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

$\sin\theta = \dfrac{1}{\csc\theta}$ ✓

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

$\tan\theta = \dfrac{1}{\cot\theta}$ ✓

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

$\dfrac{1}{\cos\theta} \div \dfrac{1}{\sin\theta} = \tan\theta$

$\dfrac{1}{\cos\theta} \cdot \dfrac{\sin\theta}{1} =$

$\dfrac{\sin\theta}{\cos\theta} = \tan\theta$ ✓

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

$\dfrac{\tan^2\theta}{\sec^2\theta} = \sin^2\theta$

$\dfrac{\sin^2\theta}{\cos^2\theta} \div \dfrac{1}{\cos^2\theta}$

$\dfrac{\sin^2\theta \cdot \cos^2\theta}{\cos^2\theta}$

$\sin^2\theta = \sin^2\theta$

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

$\cos\theta = \dfrac{\cos\theta}{\sin\theta} \div \dfrac{1}{\sin\theta}$

$= \dfrac{\cos\theta}{\sin\theta} \cdot \dfrac{\sin\theta}{1}$

$\cos\theta = \cos\theta$

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

$\sin\theta \cdot \dfrac{1}{\cos\theta} = \tan\theta$

$\dfrac{\sin\theta}{\cos\theta} = \tan\theta$

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

$\dfrac{\cos\theta}{\sin\theta} \cdot \dfrac{1}{\cos\theta} \cdot \dfrac{\sin\theta}{1} = 1$

$1 = 1$

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

$= \cos\theta \cdot \dfrac{1}{\sin\theta}$

$\cot\theta = \dfrac{\cos\theta}{\sin\theta}$ ✓

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

$\dfrac{\sec^2\theta}{\csc\theta\sec\theta} = \tan\theta$

$\dfrac{\sec\theta}{\csc\theta} = \tan\theta$

$\dfrac{1}{\cos\theta} \div \dfrac{1}{\sin\theta} = \tan\theta$

$\dfrac{1}{\cos\theta} \cdot \dfrac{\sin\theta}{1} = \tan\theta$

$\dfrac{\sin\theta}{\cos\theta} = \tan\theta$

13) $\dfrac{\csc\theta\tan\theta}{\sec^2\theta} = \cos\theta$

$\dfrac{1}{\sin\theta} \cdot \dfrac{\sin\theta}{\cos\theta} \div \dfrac{1}{\cos^2\theta} = \cos\theta$

$\dfrac{1}{\cos\theta} \cdot \dfrac{\cos^2\theta}{1} = \cos\theta$

$\cos\theta = \cos\theta$

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

$\dfrac{\sin\theta}{\cos\theta} \cdot \sin\theta + \dfrac{\cos\theta}{1}$

$\dfrac{\sin^2\theta}{\cos\theta} + \dfrac{\cos\theta}{1} \cdot \dfrac{\cos\theta}{\cos\theta}$

$\dfrac{\sin^2\theta + \cos^2\theta}{\cos\theta} = \sec\theta$

$\dfrac{1}{\cos\theta} = \sec\theta$

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

$\dfrac{\sin\theta}{\cos\theta} \cdot \dfrac{1}{\sin\theta} \cdot \dfrac{\cos\theta}{1} = 1$

$1 = 1$

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17) $\dfrac{\sin\theta}{1} \dfrac{\cos\theta}{1} \cdot \dfrac{1}{\cos\theta} \cdot \dfrac{\cos\theta}{\sin\theta} = \cos\theta$

$\cos\theta = \cos\theta$

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19) $\cos\theta \left(\dfrac{\cos\theta}{\sin\theta}\right) = \dfrac{1}{\sin\theta} - \sin\theta \left(\dfrac{\sin\theta}{1 \ \sin\theta}\right)$

$\dfrac{\cos^2\theta}{\sin\theta} = \dfrac{1 - \sin^2\theta}{\sin\theta}$

$\dfrac{\cos^2\theta}{\sin\theta} = \dfrac{\cos^2\theta}{\sin\theta} \ \checkmark$

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21) $\dfrac{1}{\sin\theta} - \cos\theta \cdot \dfrac{\cos\theta}{\sin} = \sin\theta$

$\dfrac{1 - \cos^2\theta}{\sin\theta} = \sin\theta$

$\dfrac{\sin^2\theta}{\sin\theta} = \sin\theta$

$\sin\theta = \sin\theta$

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

$\dfrac{\sin\theta \div \dfrac{1}{\cos\theta}}{\cos\theta} = \sin\theta$

$\dfrac{\sin\theta}{\cos\theta} \cdot \dfrac{\cos\theta}{1} = \sin\theta$

$\sin\theta = \sin\theta$

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18) $\dfrac{\sin\theta}{1} \dfrac{\cos\theta}{1} \dfrac{\sin\theta}{\cos\theta} + \cos^2\theta = 1$

$\sin^2\theta + \cos^2\theta = 1$

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

$\dfrac{1}{\sec^2\theta} = \cos^2\theta$

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

$\sec\theta + \sec\theta\sin\theta - \tan\theta - \tan\theta\sin\theta$

$\dfrac{1}{\cos\theta} + \dfrac{1}{\cos\theta}\sin\theta - \dfrac{\sin\theta}{\cos\theta} - \dfrac{\sin\theta}{\cos\theta} \cdot \dfrac{\sin\theta}{1}$

$\dfrac{1}{\cos\theta} + \dfrac{\sin\theta}{\cos\theta} - \dfrac{\sin\theta}{\cos\theta} - \dfrac{\sin^2\theta}{\cos\theta}$

$\dfrac{\cos^2\theta}{\cos\theta} = \cos\theta$

$\cos\theta = \cos\theta$

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

$\csc\theta - \cot\theta + \cos\theta\csc\theta - \cot\theta\cos\theta = \sin\theta$

$\dfrac{1}{\sin\theta} - \dfrac{\cos\theta}{\sin\theta} + \cos\theta\left(\dfrac{1}{\sin\theta}\right) - \dfrac{\cos\theta}{\sin\theta}\cos\theta = \sin\theta$

$\dfrac{1}{\sin\theta} - \dfrac{\cos\theta}{\sin\theta} + \dfrac{\cos\theta}{\sin\theta} - \dfrac{\cos^2\theta}{\sin\theta} = \sin\theta$

$\dfrac{1 - \cos^2\theta}{\sin\theta} = \sin\theta$

$\dfrac{\sin^2\theta}{\sin\theta} = \sin\theta$

$\sin\theta = \sin\theta$ ✓

24) $\dfrac{1}{\cos\theta} \cdot \dfrac{1}{\sin\theta} = \dfrac{\sin\theta}{\cos\theta}\dfrac{(\sin\theta)}{(\sin\theta)} + \dfrac{\cos\theta}{\sin\theta}\dfrac{(\cos\theta)}{\cos\theta}$

$\dfrac{1}{\cos\theta\sin\theta} = \dfrac{\sin^2\theta + \cos^2\theta}{\cos\theta\sin\theta}$

$\dfrac{1}{\cos\theta\sin\theta} = \dfrac{1}{\cos\theta\sin\theta}$

25) $\sec^2\theta - 1 = \tan^2\theta$

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

$\sin\theta \div \dfrac{1}{\sin\theta} + \cos\theta \div \dfrac{1}{\cos\theta} = 1$

$\sin\theta \cdot \sin\theta + \cos\theta\cos\theta = 1$

$\sin^2\theta + \cos^2\theta = 1$

27) $\dfrac{\cos\theta \cdot \cos\theta}{\sin} + \dfrac{\sin\theta \frac{(\sin\theta)}{\sin\theta}}{1} \csc\theta$

$\dfrac{\frac{\cos^2\theta}{\sin\theta} + \frac{\sin^2\theta}{\sin}}{\cos\theta}$

$\dfrac{1}{\sin\theta} = \csc\theta$