

Bellwork Alg 2B Tuesday, May 22, 2018

Verify each identity.

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

2. $\frac{\csc x}{\cot x} = \cos x + \frac{\sin x}{\cot x}$

Use the Unit Circle to find all values of θ , $0^\circ \leq \theta \leq 360^\circ$, for which each equation is true.

3. $\cos\theta = \frac{1}{2}$

4. $2\tan\theta + 5 = 3$

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ANSWERS

$$(1) \frac{1-\cos}{1-\cos} \cdot \frac{1+\cos}{1} = \frac{\sin^2}{1-\cos}$$

$$\frac{1-\cos^2}{1-\cos}$$

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

$$(2) \frac{\frac{1}{\sin}}{\frac{\cos}{\sin}} = \cos + \frac{\sin}{\frac{\cos}{\sin}}$$

$$\frac{1}{\sin} \cdot \frac{\sin}{\cos} \quad \cos + \sin \cdot \frac{\sin}{\cos}$$

$$\frac{1}{\cos} \quad \frac{\cos}{\cos} \cdot \frac{\cos}{1} + \frac{\sin^2}{\cos}$$

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

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

$$\frac{1}{\cos} = \frac{1}{\cos}$$

$$(3) \cos \theta = \frac{1}{2}$$

$$\theta = 60^\circ, 300^\circ$$

$$(4) 2 \tan \theta + 5 = 3$$

$$\quad \quad \quad -5 \quad -5$$

$$\frac{2 \tan \theta}{2} = \frac{-2}{2}$$

$$\tan \theta = -1$$

$$\theta = 135^\circ, 315^\circ$$