

Now DIY!!! (Do It Yourself)

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

$$2. \quad (1 + \csc\theta)(1 - \sin\theta) = \cot\theta \times \cos\theta$$

ANSWER KEY

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

$$\frac{\cos \theta + (1 + \cos \theta)(1 - \cos \theta)}{\cancel{1 - \cos \theta}}$$

$$\cos \theta (1 + \cos \theta)$$

$$\cos \theta + \cos^2 \theta = \cos \theta + \cos^2 \theta \quad \checkmark$$

$$2. (1 + \csc \theta)(1 - \sin \theta) = \cot \theta + \cos \theta$$
$$(1 + \csc \theta) \left(\frac{1}{\sin \theta} - 1 \right) \sin \theta$$
$$(1 + \csc \theta)(\csc \theta - 1) \sin \theta$$
$$(\csc^2 \theta - 1) \sin \theta$$
$$(\cot^2 \theta) \sin \theta$$

$$\frac{\cot \theta}{1} \times \frac{\cos \theta}{\cancel{\sin \theta}} = \frac{\cancel{\sin \theta}}{1}$$

$$\cot \theta \times \cos \theta = \cot \theta \times \cos \theta \quad \checkmark$$