

$$\text{A) } \sqrt{2} \cos \theta - 1 = 0$$

$$\text{B) } \sqrt{3} \csc \theta - 2 = 0$$

$$\text{C) } 4 \sin^2 \theta - 1 = 0$$

$$\text{D) } (3 \cot^2 \theta - 1)(\cot^2 \theta - 3) = 0$$

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

$$\text{E) } 3 \tan^2 \theta - 1 = 0$$

$$\frac{3 \tan^2 \theta}{3} = \frac{1}{3}$$

$$\sqrt{\tan^2 \theta} = \sqrt{\frac{1}{3}}$$

$$\tan \theta = \pm \frac{1}{\sqrt{3}}$$

$$\text{F) } \cos^2 \theta = 3 \sin^2 \theta$$

$$1 - \sin^2 \theta = 3 \sin^2 \theta$$

$$1 = 4 \sin^2 \theta$$

$$\sqrt{\sin^2 \theta} = \sqrt{\frac{1}{4}}$$

$$\sin \theta = \pm \frac{1}{2}$$

$$x^2 - x - 2$$

$$(x+1)(x-2)$$

G)  $2\cos^2\theta + \cos\theta = 0$

$$\cos\theta(2\cos\theta + 1) = 0$$

$$\cos\theta = 0 \quad 2\cos\theta + 1 = 0$$

$$90, 270 \quad \cos\theta = -\frac{1}{2}$$

$$120, 240$$

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

$$2\sin\theta\cos\theta - \cos\theta = 0$$

$$\cos\theta(2\sin\theta - 1) = 0$$

$$\cos\theta = 0 \quad 2\sin\theta - 1 = 0$$

$$90, 270 \quad \sin\theta = \frac{1}{2}$$

$$30, 150$$

I)  $\csc^2\theta - \csc\theta = 2$

$$\csc^2\theta - \csc\theta - 2 = 0$$

$$(\csc\theta + 1)(\csc\theta - 2) = 0$$

$$\csc\theta + 1 = 0 \quad \csc\theta - 2 = 0$$

$$\csc\theta = -1 \quad \csc\theta = 2$$

$$\sin\theta = -1 \quad \sin\theta = \frac{1}{2}$$

$$270^\circ \quad 30^\circ, 150^\circ$$

J)  $\sin^3\theta = \sin\theta$

$$\sin^3\theta - \sin\theta = 0$$

$$\sin\theta(\sin^2\theta - 1) = 0$$

$$\sin\theta(\sin\theta - 1)(\sin\theta + 1) = 0$$

$$\sin\theta = 0 \quad \sin\theta - 1 = 0 \quad \sin\theta + 1 = 0$$

$$0, 180 \quad \sin\theta = 1 \quad \sin\theta = -1$$

$$90^\circ \quad 270^\circ$$