

Alg. II/ Trig: 6.1-6.2 Quiz

Find all degree solutions

$$1. \sin(2A - 50^\circ) = \frac{\sqrt{3}}{2}$$



$$2A - 50^\circ = 60^\circ + 360^\circ n$$

$$\begin{array}{r} 2A - 50^\circ = 60^\circ + 360^\circ n \\ \hline 2A = 110^\circ + 360^\circ n \end{array}$$

$$2A - 50^\circ = 120^\circ + 360^\circ n$$

$$\begin{array}{r} 2A - 50^\circ = 120^\circ + 360^\circ n \\ \hline 2A = 170^\circ + 360^\circ n \end{array}$$

$$A = 55^\circ + 180^\circ n, 85^\circ + 180^\circ n$$

$$2. \cos(2A+30^\circ) = \frac{\sqrt{3}}{2} \quad \cancel{30}$$

$$2A+30^\circ = 30^\circ + 360^\circ n$$

$$\frac{2A}{2} = \frac{0}{2} + \frac{360^\circ}{2} n$$

$$\cancel{30}$$

$$2A+30^\circ = 330^\circ + 360^\circ n$$

$$\frac{2A}{2} = \frac{300^\circ}{2} + \frac{360^\circ}{2} n$$

$$A = 0^\circ + 180^\circ n, 150^\circ + 180^\circ n$$

$$3. \quad 2\sin^2\theta - 9\sin\theta - 5 = 0$$

$$x = \sin\theta$$
$$2x^2 - 9x - 5 = 0$$

$$(2x+1)(x-5) = 0$$

$$x = -\frac{1}{2}, 5$$

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

~~$\theta = 30^\circ$~~ ~~$\theta = 330^\circ$~~

$$\theta = 210^\circ$$

$$330^\circ$$

~~$\sin\theta = 5$~~

$$4. \quad 2\cos^2\theta - \cos\theta = 1$$

$$\underline{2\cos^2\theta - \cos\theta - 1 = 0}$$

-1 -1

$$x = \cos\theta$$

$$2x^2 - x - 1 = 0$$

$$(2x+1)(x-1) = 0$$

$$x = -\frac{1}{2}, 1$$

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

~~$\theta = 60^\circ$~~ ~~$\theta = 120^\circ$~~

$$\cos\theta = 1$$

~~$\theta = 0^\circ$~~

- $\theta = 120^\circ$
- 240°
- 0°

$$6. \quad 3\sin\theta + \sqrt{3} = \sin\theta$$

$$\frac{-\sin\theta \quad -\sin\theta}{}$$

$$2\sin\theta + \sqrt{3} = 0$$

$$\frac{-\sqrt{3} \quad -\sqrt{3}}{}$$

$$\frac{2\sin\theta}{2} = \frac{-\sqrt{3}}{2}$$

$$\sin\theta = -\frac{\sqrt{3}}{2}$$

$$\cancel{60^\circ} \quad \cancel{300^\circ}$$

$$\theta = 240^\circ, 300^\circ$$

$$7. \cos\theta + 2\sin\theta\cos\theta = 0$$

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

$$\cos\theta = 0$$

↓

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

~~30°~~ ~~330°~~

$$\theta = 90^\circ, 270^\circ, 210^\circ, 330^\circ$$

$$8) 2\cos\theta + \tan\theta = \sec\theta$$

$$\cos\theta \left[2\cos\theta + \frac{\sin\theta}{\cos\theta} = \frac{1}{\cos\theta} \right]$$

$$\theta \neq 90^\circ, 270^\circ$$

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

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

$$2 - 2\sin^2\theta + \sin\theta - 1 = 0$$

$$-1 \left[-2\sin^2\theta + \sin\theta + 1 = 0 \right]$$

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

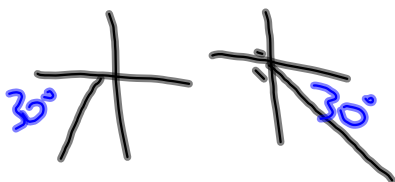
$$x = \sin\theta$$

$$2x^2 - x - 1 = 0$$

$$(2x + 1)(x - 1) = 0$$

$$x = -\frac{1}{2}, 1$$

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



$$\sin\theta = 1$$



$$\theta = 210^\circ, 330^\circ, \cancel{90^\circ}$$

$$9. 2\sin^2\theta - \cos\theta - 1 = 0$$

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

$$2 - 2\cos^2\theta - \cos\theta - 1 = 0$$

$$-1 \left[-2\cos^2\theta - \cos\theta + 1 = 0 \right]$$

$$2\cos^2\theta + \cos\theta - 1 = 0$$

$$x = \cos\theta$$

$$2x^2 + x - 1 = 0$$

$$(2x-1)(x+1) = 0$$

$$x = \frac{1}{2}, -1$$

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

$$\cancel{60} \quad \cancel{300}$$

$$\cos\theta = -1$$

$$180$$

$$\theta = 60^\circ, 300^\circ, 180^\circ$$

