(29) $2\sin\theta\cos\theta + \sqrt{3}\sin\theta = 0$ $0° \le x < 360°$

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

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

$\boxed{\theta = 0°, 180°}$ $\cos\theta = -\frac{\sqrt{3}}{2}$

$\boxed{\theta = 150°, 210°}$

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(25) $\sin x \tan x - \sin x = 0$ $0° \le x < 360°$

$\sin x(\tan x - 1) = 0$

$\sin x = 0$ $\tan x - 1 = 0$

$\boxed{x = 0°, 180°}$ $\tan x = 1$

$\boxed{x = 45°, 225°}$

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(21) $\cos^2 x = \cos x$ principal values $\dfrac{\cos^2 x = \cancel{\cos x}}{\cancel{\cos x}} \, \cos x$

$\cos^2 x - \cos x = 0$

$\cos x(\cos x - 1) = 0$

$\cos x = 0$ $\cos x - 1 = 0$

$\boxed{x = 90°}$ $\cos x = 1$

$\boxed{x = 0°}$

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(27) $\sin 2x = -\sin x$

$\sin 2x + \sin x = 0$

$2\sin x \cos x + \sin x = 0$

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

$\sin x = 0$ $2\cos x + 1 = 0$

$\boxed{x = 0°, 180°}$ $\cos x = -\frac{1}{2}$

$\boxed{x = 120°, 240°}$

$0 \leq x < 360°$

$\sqrt{2}\sin x - 1 = 0$

$\sin x = \dfrac{1}{\sqrt{2}}$

$\sin x = \dfrac{\sqrt{2}}{2}$

$\boxed{x = 45°, 135°}$

$0 \leq x < 2\pi$

$\sqrt{2}\sin x - 1 = 0$

$\sin x = \dfrac{1}{\sqrt{2}}$

$\sin x = \dfrac{\sqrt{2}}{2}$

$x = 45°, 135°$

$45 \times \dfrac{\pi}{180} = \dfrac{45\pi}{180} = \boxed{\dfrac{\pi}{4}}$

$135 \times \dfrac{\pi}{180} = \dfrac{135\pi}{180} = \boxed{\dfrac{3\pi}{4}}$

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for all __real values__

$\sqrt{2}\sin x - 1 = 0$

$\sin x = \dfrac{\sqrt{2}}{2}$

$x = 45, 135$

$x = \dfrac{\pi}{4}, \dfrac{3\pi}{4}$

$x = \dfrac{\pi}{4} + 2\pi k, \quad k = \text{integer}$

$x = \dfrac{3\pi}{4} + 2\pi k, \quad k = \text{integer}$

10. $2 \sin^2 x = 5 \sin x + 3$

$ax^2 + bx + c$

$(\quad)(\quad)$

$2 \sin^2 x - 5 \sin x - 3 = 0$

$(\sin x \quad -3)(2\sin x +1) = 0$

-3

$\wedge$

$-1 \quad 3$

$1 \quad -3$

$\sin x - 3 = 0$ $\qquad$ $2\sin x + 1 = 0$

$\sin x = 3$ ~~$\sin x = 3$~~ $\qquad$ $\sin x = -\dfrac{1}{2}$

$x = 210°, 330°$

$x = \dfrac{7\pi}{6}, \dfrac{11\pi}{6}$

$210 \times \dfrac{\pi}{180} \qquad \dfrac{210\pi}{180}$

$330 \times \dfrac{\pi}{180} \qquad \dfrac{330\pi}{180}$