

Algebra 3 Assignment # 10

Solve for x, if $0 \leq x < 2\pi$ please.

(1) $2\cos^2(2x) = 1$

(2) $4\sin(x) = 3\csc(x)$

(3) $2\sin^2(2x) + \sin(2x) = 0$

(4) $2\cos^3(x) - \cos(x) = 0$

(5) $2\sin(7x) = \sqrt{7}$

(6) $4\sin^2(x) - 4\sin(x) - 3 = 0$

(7) $3\sin^2(x) - 3\sin(x) + \cos^2(x) = 0$

(8) $2\cos^4(x) - 2\cos^2(x) + \sin^2(x) = 0$

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

(10) $\cos(2x) = 3\sin(x) - 1$

(11) $\sin(5x)\cos(3x) - \cos(5x)\sin(3x) = 1$

(12) $\cos(3x)\cos(x) + \sin(3x)\sin(x) = 0$

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Answers

$$(1) \left\{ \frac{\pi}{8}, \frac{3\pi}{8}, \frac{5\pi}{8}, \frac{7\pi}{8}, \frac{9\pi}{8}, \frac{11\pi}{8}, \frac{13\pi}{8}, \frac{15\pi}{8} \right\}$$

$$(2) \left\{ \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3} \right\}$$

$$(3) \left\{ 0, \frac{\pi}{2}, \pi, \frac{3\pi}{2}, \frac{7\pi}{12}, \frac{11\pi}{12}, \frac{19\pi}{12}, \frac{23\pi}{12} \right\}$$

$$(4) \left\{ \frac{\pi}{2}, \frac{3\pi}{2}, \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4} \right\}$$

$$(5) \phi$$

$$(6) \left\{ \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$$

$$(7) \left\{ \frac{\pi}{6}, \frac{5\pi}{6}, \frac{\pi}{2} \right\}$$

$$(8) \left\{ \frac{\pi}{2}, \frac{3\pi}{2}, \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4} \right\}$$

$$(9) \left\{ \frac{\pi}{2}, \frac{2\pi}{3}, \frac{4\pi}{3} \right\}$$

$$(10) \left\{ \frac{\pi}{6}, \frac{5\pi}{6} \right\}$$

$$(11) \left\{ \frac{\pi}{4}, \frac{5\pi}{4} \right\}$$

$$(12) \left\{ \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4} \right\}$$