

Algebra 3 Assignment # 11

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

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

(2) $\cos(2x) = 5\sin^2(x) - \cos^2(x)$

(3) $\tan(2x) + \cot(2x) = 2$

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

(5) $\sin(x)\cos(x) = \frac{1}{2}$

(6) $\cos(2x) + 5\sin(x) = 3$

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

(8) $8\cos^4(x) - 4\cos^2(x) - 3\cos(2x) = 0$

(9) $\sin(2x) - 4\sin(x) + \cos(x) = 2$

(10) $\cot(5x) - \cot(2x) = 0$

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Answers

$$(1) \left\{ \frac{\pi}{2}, \frac{3\pi}{2} \right\}$$

$$(2) \left\{ \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$$

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

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

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

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

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

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

$$(9) \left\{ \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$$

$$(10) \left\{ \frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}, \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$$