Find **ALL** EXACT values of θ that makes this equation true. Give answer in degrees.

$8\sin\theta + 15 = 11$

$-15 \quad -15$

$\frac{8\sin\theta}{8} = \frac{-4}{8}$

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

$\theta = 210° + 360°n \quad \& \quad 330° + 360°n$

n = set of integers

This is what the book calls the "complete solution".

period = 360°

Find the complete solution. Round to the nearest hundredth. Give answer in degrees.

$6\cos 2\theta - 1 = 4$

$\cos 2\theta = 5/6$

period = $\frac{360}{2} = 180°$

$\frac{2\theta}{2} = \cos^{-1}(5/6) = \frac{33.56°}{2}$ & $\frac{-33.56° + 360}{2} = \frac{326.44}{2}$

$\theta = 16.78° + 180°n \quad \& \quad 163.22° + 180°n$

Find the complete solution. Round to the nearest hundredth. Give answer in radians.

$-2\tan 5\theta + 6 = 3$

period = $\frac{\pi}{5}$

$\tan 5\theta = 1.5$

$\frac{5\theta}{5} = \tan^{-1}(1.5) = \frac{.98}{5}$ & $\frac{.98 + \pi}{5} = \frac{4.12}{5}$

$\theta = .20 + \frac{\pi}{5}n \quad \& \quad .82 + \frac{\pi}{5}n$

Find the complete solution. Round to the nearest hundredth. Give answer in degrees.

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

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

$\cos\theta = 0 \qquad \cos\theta = 1$

$\theta = \underbrace{90° \& 270°}_{+360°n} \qquad \theta = \underbrace{0° \& 360°}_{+360°n}$

Find the complete solution. Round to the nearest hundredth. Give answer in degrees.

$4\sin^2\theta = 3\sin\theta$

$4\sin^2\theta - 3\sin\theta = 0$

$\sin\theta(4\sin\theta - 3) = 0$

$\sin\theta = 0$ → $\theta = 0°, 180°, 360°$ → $+360°n$

$4\sin\theta - 3 = 0$

$\sin\theta = 3/4$

$\theta = \sin^{-1}(3/4)$

$\theta = 48.59° \text{ \& } 131.41°$ → $+360°n$

Find the complete solution. Round to the nearest hundredth. Give answer in degrees.

$\tan\theta - \sin\theta\tan\theta = 0$

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

$\tan\theta = 0$ → $\theta = 0°, 180°, 360°$ → $+180°n$

$\sin\theta = 1$ → $\theta = 90°$ → $+360°n$

Find the complete solution. Round to the nearest hundredth. Give answer in degrees.

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

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

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

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

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

$2\sin\theta + 1 = 0$	$\sin\theta - 1 = 0$
$\sin\theta = -1/2$	$\sin\theta = 1$
$\theta = 210° \text{ \& } 330°$ → $+360°n$	$\theta = 90°$ → $+360°n$

Find the complete solution. Round to the nearest hundredth. Give answer in degrees.

$8\cos^2 x + 2\cos x = 3$ (write as a quadratic)

$8x^2 + 2x - 3 = 0$

-24, 6, -4, $+2$

	$2x$	-1
$4x$	$8x^2$	$-4x$
$+3$	$6x$	-3

$(2x - 1)(4x + 3)$

$(2\cos x - 1)(4\cos x + 3) = 0$

$\cos x = 1/2$ → $x = 60° \text{ \& } 300°$ → $+360n$

$\cos x = -3/4$ → $x = \cos^{-1}(-3/4)$

$x = 138.59° \text{ \& } 221.41°$ → $+360°n$

You can now finish Hwk #28

Practice Sheet Sec 14-2

Give EXACT answers when possible, otherwise, round to the nearest hundredth.