Name: _____   Points: _____

1. Solve for x: $0 \leq x < 360°$

a) $3\sin^2 x = \sin x$

b) $2\cos^2 \theta - \cos \theta = 1$

c) $\tan^3 A = \sqrt{3} \tan x$

d) $3\sin^2 x - 5\cos x = 1$

Table of Values for Trigonometric Functions

An Indian mathematician known by the name of Aryabhata (476-550 AD) developed the ratios for sine and cosine. Bhaskara, an Indian mathematician in the seventh century AD, found a fairly precise formula to calculate the sine of x using radians and not degrees:

$\sin x = \dfrac{16x(\pi - x)}{5\pi^2 - 4x(\pi - x)}$ for $0 \leq x \leq \dfrac{\pi}{2}$. Then in the ninth century, Al-Khwarizmi was able to create a table for sine, cosine, and tangent. After a century, Islamic mathematicians had access to all six ratios and had tables accurate to eight decimals.

Reference:
Willers, M. (2009). *Algebra: The x and y of everyday math.* New York, NY: Fall River Press.