

Name: _____

Date: _____

Section 4.3 Solving Trigonometric Functions with Horizontal compressions and factoring:1. Solve the following trigonometric equations for θ ; $0 \leq \theta \leq 360^\circ$ by factoring:

a) $\sin x \cos x = 0$	b) $(\tan x - 1)(4\sin^2 x - 3) = 0$
c) $\sin^2 x + \sin x - 2 = 0$	d) $2\sin \theta - \csc \theta = 1$
e) $2\sec \theta = \tan \theta + \cot \theta$	e) $\tan \theta + 3\cot \theta = 4$
f) $\cos \theta - \sqrt{3} \sin \theta = 1$	g) $2\cos \theta = 1 - \sin \theta$

h) $\cos \theta + \cos 2\theta = 0$	j) $\sin 2\theta + \sin \theta = 0$
i) $2 \sin \theta + \csc \theta = 3$	k) $2 \tan \theta \sin \theta - \tan \theta = 0$

2. Solve the following trigonometric equations with horizontal compression for θ ; $0 \leq \theta \leq 360^\circ$

$\sin 4\theta = \frac{\sqrt{3}}{2}$	$(2 \cos 3\theta - 1)(4 \tan 2\theta - 3) = 0$
$2 \sin^2 2\theta - \sin 2\theta - 1 = 0$	$\sin 2\theta \cos 2\theta \tan 2\theta = 0$

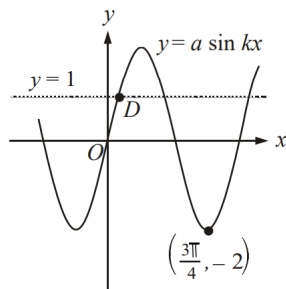
3. How many solutions will the equation $\cos 3\theta = 0.5$ for $0^\circ \leq \theta \leq 360^\circ$. Solve for θ .

4. Solve for θ , for $0^\circ < \theta < 360^\circ$: $\sin^2 2\theta - \cos^2 2\theta = 0$

5. Solve for θ , for $0^\circ < \theta < 360^\circ$: $\sin^3 2\theta + 3\sin^2 2\theta + 3\sin 2\theta = 0$

6. Solve for θ , for $0^\circ < \theta < 360^\circ$: $(\sin 2\theta - \cos 2\theta)(1 + \sin \theta \cos \theta) = 0$

The graph of the equation $y = a \sin kx$ is shown in the diagram, and the point $\left(\frac{3\pi}{4}, -2\right)$ is the minimum point indicated. The line $y = 1$ intersects the graph at point D . What are the coordinates of D ?



7.

(a) Determine all angles θ with $0^\circ \leq \theta \leq 180^\circ$ and $\sin^2 \theta + 2 \cos^2 \theta = \frac{7}{4}$.