

I. Solve each trigonometric equation. Keep answer(s) in degrees where $0^\circ \leq x < 360^\circ$. Show work!!

1.) $2 \cos x - \sqrt{3} = 0$	2.) $2 \sin x + 1 = 4 \sin x$	3.) $\tan x + \sqrt{3} = 0$
4.) $(\tan x - 1)(\cos x + 2) = 0$	5.) $4 \sin\left(\frac{x}{5}\right) - 4 = 0$	6.) $3 \tan 3x - \sqrt{3} = 0$
7.) $2 \cos\left(\frac{3x}{5}\right) + \sqrt{2} = 0$	8.) $\sin x(1 - \sin x) = 0$	9.) $3 \cos x + 8 = 3 - 2 \cos x$
10.) $2 \sin(2x + 30^\circ) = 1$	11.) $(2 \sin x + 1)(\sqrt{3} + 3 \tan x) = 0$	12.) $\frac{1}{\cos x} = -\frac{2}{\sqrt{3}}$
13.) $\cos x(\cos x + 1)(\sqrt{3} \tan x - 1) = 0$	14.) $\frac{1}{2 \sin x - 3} = \frac{2}{3 \sin x}$	15.) $4 \sin^2 x - 3 = 0$

II. Complete each application problem involving a trigonometric equation. Show work!!

16.) A person's blood pressure can be represented by $p = 20 \sin(360^\circ t) + 100$. What is a person's blood pressure after 10 seconds?	17.) The population of owls can be represented by $p = 150 + 30 \sin(18^\circ t)$. After how many years will the owl population reach its maximum amount?	18.) Gene gets onto a 28 diameter Ferris wheel that is 4 feet above the ground. It takes the wheel 12 seconds to complete one cycle. How long does it take for Gene to be 32 feet above the ground?
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