

Solve for x .

1. $2\cos\theta + \sqrt{3} = 0$ $\theta = [0,360]$

2. $4\cos^2\theta = 3$ $\theta = [0,360]$

3. $\sin^2 x - 2\sin x = 3$ $x = [0,360]$

4. $2\sin^2 x = 9\sin x + 5$ $x = [0,360]$

5. $\sin^2 B - \sin B = 0$ $B = [-90,90]$

6. $2\cos\theta + \sqrt{3} = 0$ $\theta = [0,180]$

7. $3\tan(\theta + 25) = 3$ $\theta = [0,360]$

8. $\sin\theta\cos\theta = 0$ $\theta = [0,180]$

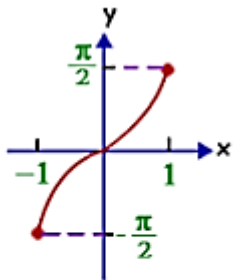
9. $3\sin x + 1 = \sin x$ $x = [0,180]$

10. $2\sin(a)\cos(a) = \sin(a)$ $a = [0,90]$

Inverse Trig Functions. We have to restrict the range to have a function and not a relation.

$$f(x) = \sin^{-1} x$$

Values of x used in arcsine are in quadrat I and IV.

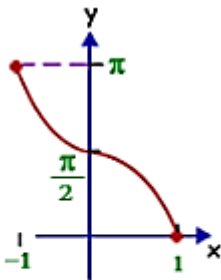


Domain : $-1 \leq x \leq 1$

Range : $-\frac{\pi}{2} \leq y \leq \frac{\pi}{2}$

$$f(x) = \cos^{-1} x$$

Values of x used in arccosine are in quadrat I and II.

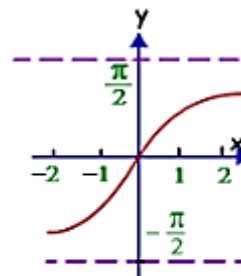


Domain : $-1 \leq x \leq 1$

Range : $0 \leq y \leq \pi$

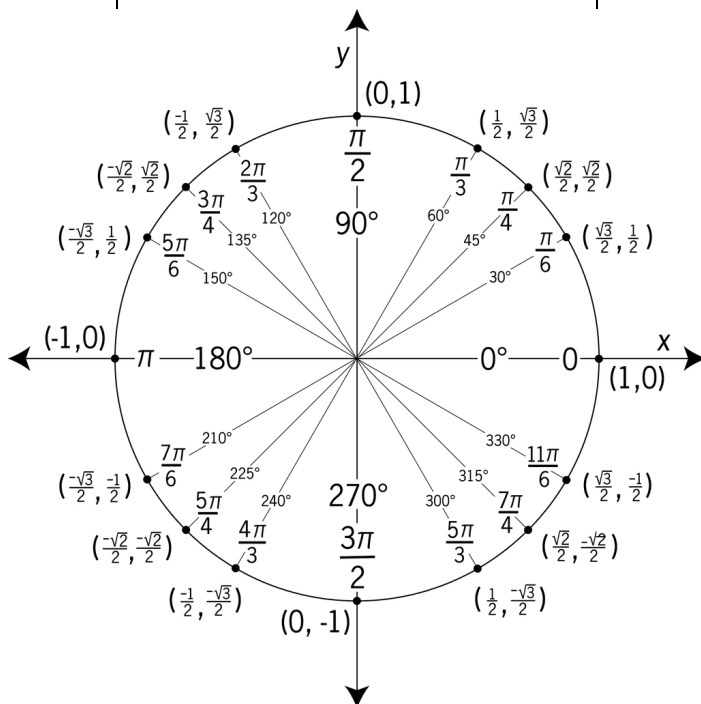
$$f(x) = \tan^{-1} x$$

Values of x used in arctangent are in quadrat I and IV.



Domain : $-\infty < x < \infty$

Range : $-\frac{\pi}{2} < y < \frac{\pi}{2}$



Simplify the following.

1. $\sin^{-1}(-1)$ _____

2. $\cos^{-1}\left(\frac{1}{2}\right)$ _____

3. $\cos^{-1}(0)$ _____

4. $\cos^{-1}(3)$ _____

5. $\sin^{-1}\left(\frac{-1}{2}\right)$ _____

6. $\cos^{-1}\left(\frac{-\sqrt{2}}{2}\right)$ _____

7. $\sin\left(\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)\right)$ _____

8. $\cot^{-1}\left(\frac{-\sqrt{3}}{3}\right)$ _____

9. $\tan\left(\sin^{-1}\left(\frac{\sqrt{2}}{2}\right)\right)$ _____

10. $\csc^{-1}(\cos(\pi))$ _____

11. $\sin^{-1}\left(\sin\left(\frac{4\pi}{3}\right)\right)$ _____

12. $\sin\left(\cos^{-1}\left(\frac{1}{2}\right)\right)$ _____

Precalculus Solving Trig Equations Review 2

Name: _____ Block: ____

Find all the solutions for $0 \leq x \leq 360$

1. $3 \sec^2 x - 4 = 0$

2. $4 \cos^2 x - 2 = 0$

3. $2 \sin^2 x + 5 \sin x = 3$

4. $\sin x - 2 \sin x \cos x = 0$

5. $10 \cos x - 4 = 4 \cos x$

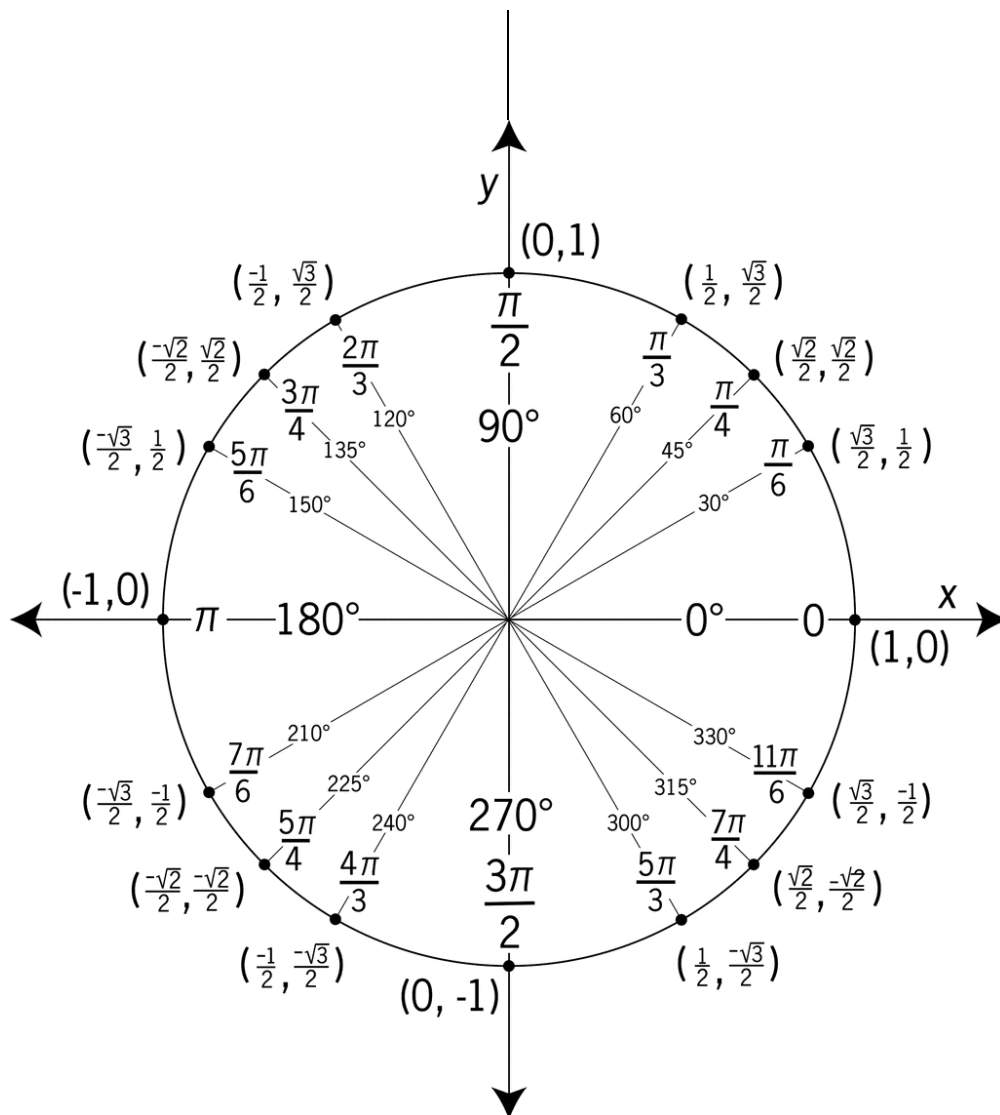
6. $\sin^2 x - 3 \sin x = -2$

7. $16 \tan^2 x = 5$

8. $2 \cos^2 x + \cos x = 0$

9. $3 \sin x = 2 \cos^2 x$

10. $\sqrt{3} \tan x + 1 = 0$



Find the exact value of the expression.

1. $\arcsin\left(\frac{1}{2}\right)$

2. $\cos\left(\sin^{-1}\left(\frac{1}{2}\right)\right)$

3. $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$

4. $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$

5. $\arctan(-\sqrt{3})$

6. $\sin\left(\operatorname{arcsec}\left(\frac{2\sqrt{3}}{3}\right)\right)$

7. $\csc(20^\circ)$

8. $\operatorname{arcsec}(2)$

9. $\cot\left(\frac{9}{2}\right)$

10. $\csc(\arctan(1))$

11. $\tan^{-1} 1$

12. $\cot^{-1}(-1)$