$$\sin A = \tfrac{1}{2} \qquad \text{find} \quad A.$$

$$A = \sin^{-1}\left(\tfrac{1}{2}\right) = 30$$
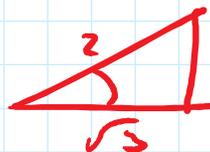
$$\sin^{-1} x \neq (\sin x)^{-1} = \frac{1}{\sin x}$$

$$\sin^{-1} x = \text{sin inverse of } x$$

$$\sin 30 = \tfrac{1}{2}$$

$$\sin^{-1}\left(\tfrac{1}{2}\right) = 30°$$

$$\cos A = \frac{\sqrt{3}}{2}$$

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

$$A = 30°$$

$$\tan^{-1}(1) = A$$

$$A = 45°$$

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

$$\sin^{-1} \quad \cos^{-1} \quad \tan^{-1} \quad \text{stand for an angle.}$$

Find $\sin\left(\cos^{-1}\frac{4}{5}\right)$

$$\cos^{-1}\left(\frac{4}{5}\right) = A$$

$$\cos A = \frac{4}{5}$$

$$\sin A = \frac{3}{5}$$

Find $\cos\left(2\sin^{-1}\frac{12}{13}\right)$

$$\sin^{-1}\frac{12}{13} = A$$

$$\Rightarrow \quad \sin A = \frac{12}{13}$$

Need $\cos 2A = \cos^2 A - \sin^2 A$

$$= \left(\frac{5}{13}\right)^2 - \left(\frac{12}{13}\right)^2$$

$$= \frac{25}{169} - \frac{144}{169} = \frac{-119}{169}$$

Find $\cos\left(\sin^{-1}x\right)$

$$\sin^{-1}x = A$$

$$\sin A = \frac{x}{1}$$

$$\cos A = \sqrt{1-x^2}$$