Calculus II
Inverse trig and special angles

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

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- $\arcsin y =$ *the appropriate angle whose sine equals* y*.*

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

- $\sin\left(\frac{\pi}{6}\right) = \frac{1}{2}$.

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- $\arcsin y =$ *the appropriate angle whose sine equals* y*.*
- *Important: the output angle must lie in the interval* $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$*.*

Example

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- $\sin\left(\frac{\pi}{6}\right) = \frac{1}{2}$.
- $-\frac{\pi}{2} \leq \frac{\pi}{6} \leq \frac{\pi}{2}$.

Observation

- $\arcsin y =$ *the appropriate angle whose sine equals* y*.*
- *Important: the output angle must lie in the interval* $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$*.*

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

- $\sin\left(\frac{\pi}{6}\right) = \frac{1}{2}$.
- $-\frac{\pi}{2} \leq \frac{\pi}{6} \leq \frac{\pi}{2}$.
- Therefore $\arcsin\left(\frac{1}{2}\right) = \frac{\pi}{6}$.