

# Precalculus

## Inverse trig and special angles

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

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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  $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$ .*

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

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## Example

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