

# Precalculus

## Simplify $\arccos(\cos(x))$

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## Example

Find  $\arccos(\cos 4)$ .

- 4 is not between 0 and  $\pi$ .
- We need the angle  $a$  between 0 and  $\pi$  for which  $\cos 4 = \cos a$ .

$$a = \pi - (4 - \pi) = 2\pi - 4$$

$$\begin{aligned} \text{Therefore } \arccos(\cos 4) &= \arccos(\cos a) \\ &= a = 2\pi - 4. \end{aligned}$$

