LESSON MAKER PRO

Turn by Turn

Convert angles between degrees and radians.

HIGH SCHOOL · PC.T.1.2

PC.T.1.2 "Convert radian measure to degree measure and vice-versa."

NAME _____ DATE _____

THE CONVERSION RULE

A full turn is 360° or 2pi radians. Multiply degrees by pi/180 to get radians, or multiply radians by 180/pi to get degrees.

WORKED EXAMPLE

Convert the marked angle to radians.



1. 135° × pi/180° = 135pi/180 radians
2. 135pi/180 = 3pi/4

Answer: 3pi/4 radians

PRACTICE 4 problems

1 Convert 210° to radians.

ANSWER _____

2 Convert 315° to radians.

ANSWER _____

3 Convert 5pi/3 radians to degrees.

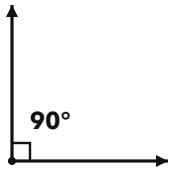
ANSWER _____

4 Convert 11pi/12 radians to degrees.

ANSWER _____

APPLY IT Show your work

1 A skateboard game records the marked turn. What is the turn in radians?



ANSWER _____

2 A phone camera pans through the marked angle. What is the pan in radians?



ANSWER _____

CHALLENGE One step up

A game character turns 5pi/4 radians clockwise, then pi/3 radians counterclockwise. What is the net turn in degrees, and which direction?

WORK SPACE AND ANSWER

ANSWER KEY

Turn by Turn

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Convert 210° to radians.	**7pi/6 radians**
2	Convert 315° to radians.	**7pi/4 radians**
3	Convert 5pi/3 radians to degrees.	**300°**
4	Convert 11pi/12 radians to degrees.	**165°**

PART 2 · APPLY IT

1. **pi/2 radians** Multiply 90° by pi/180° and simplify.
2. **2pi/3 radians** Multiply 120° by pi/180° and simplify.

CHALLENGE

165° clockwise

For the challenge, treat counterclockwise as positive: pi/3 - 5pi/4 = -11pi/12 radians = -165°. Accept -165° as the net turn if the student identifies it as clockwise.