Questions: Introduction to radians

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Summary

Questions relating to the introduction to radians study guide.

*Before attempting these questions, it is highly recommended that you read* [*Guide: Introduction to radians*](../studyguides/radians.qmd)*.*

## Q1

Convert the following angle measures in degrees into radians, giving your answer as both a fraction of $π$ and a real number to three decimal places.

1.1. $ 30^{∘}$

1.2. $ 105^{∘}$

1.3. $ 298^{∘}$

1.4. $ 61^{∘}$

1.5. $ 353^{∘}$

1.6. $ 197^{∘}$

## Q2

Convert the following angle measures in radians into degrees. If your answer is a decimal, you should give your answer to three decimal places.

2.1. $ \frac{π}{3}$

2.2. $ \frac{2π}{3}$

2.3. $ \frac{π}{7}$

2.4. $ \frac{5π}{7}$

2.5. $ 5$

2.6. $ \frac{3}{4}$

## Q3

Find the length of arc and the area of the sector of the following specified objects, giving your answer as either a fraction of $π$ or expressing your answer to three decimal places.

3.1. circle with radius $7$ over an angle of $\frac{π}{8}$

3.2. circle with radius $\frac{1}{3}$ over an angle of $\frac{3π}{2}$

3.3. circle with radius $30$ over an angle of $\frac{7π}{15}$

[After attempting the questions above, please click this link to find the answers.](../answers/as-radians.qmd)

## Version history and licensing

v1.0: initial version created 08/23 by Mark Toner, Ifan Howells-Baines as part of a University of St Andrews STEP project.

* v1.1: edited 05/24 by tdhc.

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