

# 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](#).*

## Q1

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

1.1.  $30^\circ$

1.2.  $105^\circ$

1.3.  $298^\circ$

1.4.  $61^\circ$

1.5.  $353^\circ$

1.6.  $197^\circ$

## 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.  $\frac{\pi}{3}$

2.2.  $\frac{2\pi}{3}$

2.3.  $\frac{\pi}{7}$

2.4.  $\frac{5\pi}{7}$

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  $\pi$  or expressing your answer to three decimal places.

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

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

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

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[After attempting the questions above, please click this link to find the answers.](#)

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### 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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