# Questions: Introduction to radians

Mark Toner, Ifan Howell-Baines

#### **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.

- $1.1. \quad 30^{\circ}$
- 1.2.  $105^{\circ}$
- 1.3.  $298^{\circ}$
- 1.4. 61°
- 1.5. 353°
- 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  $\frac{7\pi}{15}$

After attempting the questions above, please click this link to find the answers.

### 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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