# Questions: Trigonometry (radians)

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#### Summary

A selection of questions on trigonometry, where angles are measured in degrees.

Before attempting these questions, it is recommended that you read Guide: Trigonometry (radians)

#### **Q1**

You are given the triangle below.

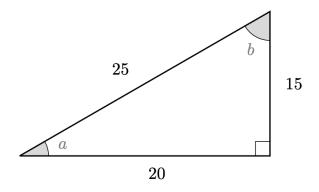


Figure 1: Q1. Triangle

Find  $\cos$ ,  $\sin$  and  $\tan$  of both a and b.

#### Q2

Using the triangle below, solve the following equations.

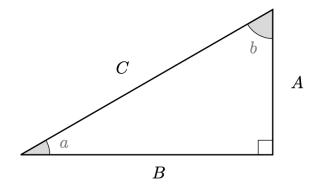


Figure 2: Q2. Triangle

- 2.1. If angle a is  $\pi/6$  and B=6, what length is C?
- 2.2. If angle b is  $\pi/4$  and  $C=2\sqrt{2}$ , what length is A?
- 2.3. If angle a is  $\pi/12$  and C=7, what length is A?
- 2.4. If angle b is  $\pi/6$  and  $C=2\sqrt{2}$ , what length is A?
- 2.5. If angle a is  $\pi/4$  and B=8, what length is A?
- 2.6. If angle a is  $\pi/3$  and A=8, what length is B?

### Q3

Without using a calculator if possible, give the values of the following expressions.

- 3.1.  $\cos(\pi/6)$
- 3.2.  $\tan(\pi/6)$
- 3.3.  $\csc(\pi/4)$
- 3.4.  $\cot(\pi/6) \sin(\pi/3)$
- 3.5.  $\sin(\pi/2) + \cos(\pi)$
- 3.6.  $\tan(\pi/6) \cot(\pi/6)$
- 3.7.  $\cos(0)\sin(\pi/2)$
- 3.8.  $\cos(\pi/6)\sec(\pi/6) \sin(\pi/4)\csc(\pi/4)$
- 3.9.  $\cot(\pi/2)$

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 Dzhemma Ruseva, Ellie Gurini, Ciara Cormican as part of a University of St Andrews STEP project.

• v1.1: edited 05/24 by tdhc, and split into versions for both degrees and radians.

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