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.

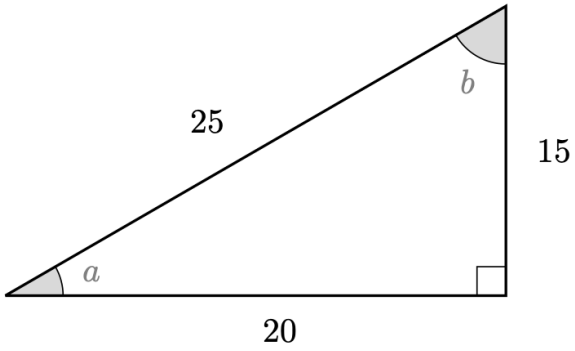

Figure 1: Q1. Triangle

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

Q2

Using the triangle below, solve the following equations.

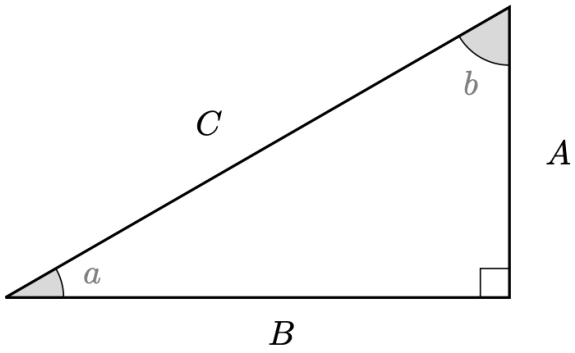

Figure 2: Q2. Triangle

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.