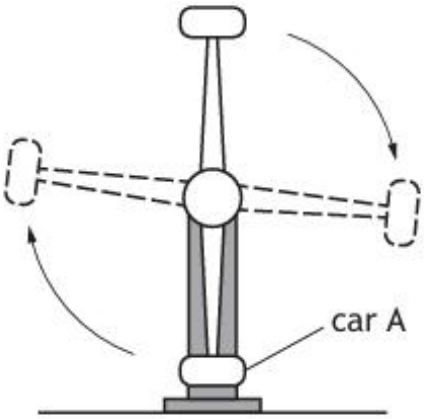
National 5 Maths
SQA 2025 Paper 2
Question 14

National 5 Maths
Maths.scot

A ride at a theme park has a car attached to each end of a rotating arm.

MARK

The starting position of car A is shown in the diagram.



As the arm rotates clockwise, the height, h metres, of car A above the ground in each rotation is given by

$$h = 10 - 8\cos x°, \quad 0 \leq x < 360$$

where $x°$ is the angle the arm has turned from car A's starting position.

Calculate the **two** values of x for which the height of car A is 13 metres above the ground. 4

Answer: $x = 112.0°$ and $x = 248.0°$