

Solve the equation $5 \cos x^\circ - 3 = 1$, $0 \leq x \leq 360$.

3

$$f(x) = 3 \sin x^\circ, \quad 0 \leq x < 360$$

(a) Find $f(270)$.

(b) $f(t) = 0.6$.

Find the two possible values of t .

Solve the equation

$$2 \tan x^\circ + 7 = 0, \quad 0 \leq x \leq 360.$$

3

Solve the equation

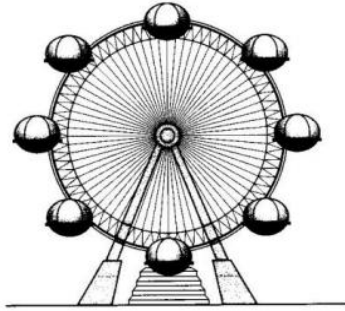
$$4 \tan x^\circ + 5 = 0, \quad 0 \leq x \leq 360.$$

3

Solve the equation $11 \cos x^\circ - 2 = 3$, for $0 \leq x \leq 360$.

3

Emma goes on the “Big Eye”.



Her height, h metres, above the ground is given by the formula

$$h = -31 \cos t^\circ + 33$$

where t is the number of seconds since the start.

- (a) Calculate Emma's height above the ground 20 seconds after the start. 2
- (b) When will Emma first reach a height of 60 metres above the ground? 3
- (c) When will she next be at a height of 60 metres above the ground? 1



A Ferris wheel is turning at a steady rate.

The height, h metres, of one of the cars above the ground at a time t seconds is given by the formula

$$h = 7 + 5 \sin t^\circ.$$

Find **two** times during the first turn when the car is at a height of 10.8 metres above the ground.