

Solving Trigonometric Equations

For AQA Level 2 Certificate in Further Mathematics (8365)

Name _____

Total marks: **23**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator.

- 1** Solve $\sin x = 0.35$ for $0^\circ \leq x \leq 360^\circ$
Give your answers to 1 decimal place.

[2 marks]

Answer _____ $^\circ$ and _____ $^\circ$

- 2** Solve $2\cos x + \sqrt{3} = 0$ for $0^\circ \leq x \leq 360^\circ$
You must show your working.

[2 marks]

Answer _____ $^\circ$ and _____ $^\circ$

- 3** Solve $3\sin x = 5\cos x$ for $0^\circ \leq x \leq 360^\circ$
Give your answers to 1 decimal place.

[2 marks]

Answer _____ $^\circ$ and _____ $^\circ$

- 4 Solve $25 \sin^2 x = 16$ for $0^\circ \leq x \leq 360^\circ$
Give your answers to 1 decimal place.

[3 marks]

Answer _____

- 5 Solve $2 \sin x \cos x = \sin x$ for $0^\circ \leq x \leq 360^\circ$

[3 marks]

Answer _____

- 6 Solve $\tan^2 x = 3$ for $90^\circ < x < 270^\circ$

[3 marks]

Answer _____

- 7** Solve $3 \cos^2 x + 5 \sin x = 1$ for $0^\circ \leq x \leq 360^\circ$
Give your answers to 1 decimal place.

[4 marks]

Answer _____

- 8** (a) Show that the equation $4 \sin x \tan x = 15$ can be written as
 $4 \cos^2 x + 15 \cos x - 4 = 0$

[2 marks]

- (b) Hence solve $4 \sin x \tan x = 15$ for $0^\circ \leq x \leq 360^\circ$
Give your answers to 1 decimal place.

[2 marks]

Answer _____