Surname	
Other Names	
Candidate's Signature	

GCSE 9 - 1 Questions

Exact Trigonometrical Values

INSTRUCTIONS TO CANDIDATES

Write your name in the space provided.

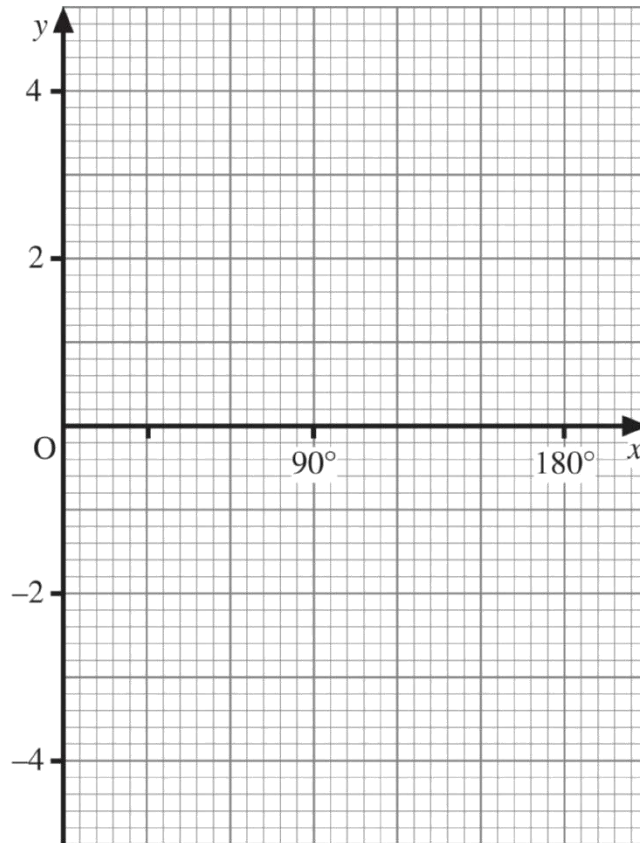Write your answers in the spaces provided in this question paper.

Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You should have a ruler, compass and protractor where required.

Total Marks :

1)

(a) On the grid, sketch the graph of $y = \tan x$ for $0° \leqslant x \leqslant 180°$. [2]

(b) Use your graph to estimate the value of x in the range $0° \leqslant x \leqslant 180°$ for which $\tan x = -3$

Answer _____° [1]

2) Solve the equation

$$3 \tan x° = 4 \qquad \text{for } 0 \leq x < 360$$

Answer _____ [2]

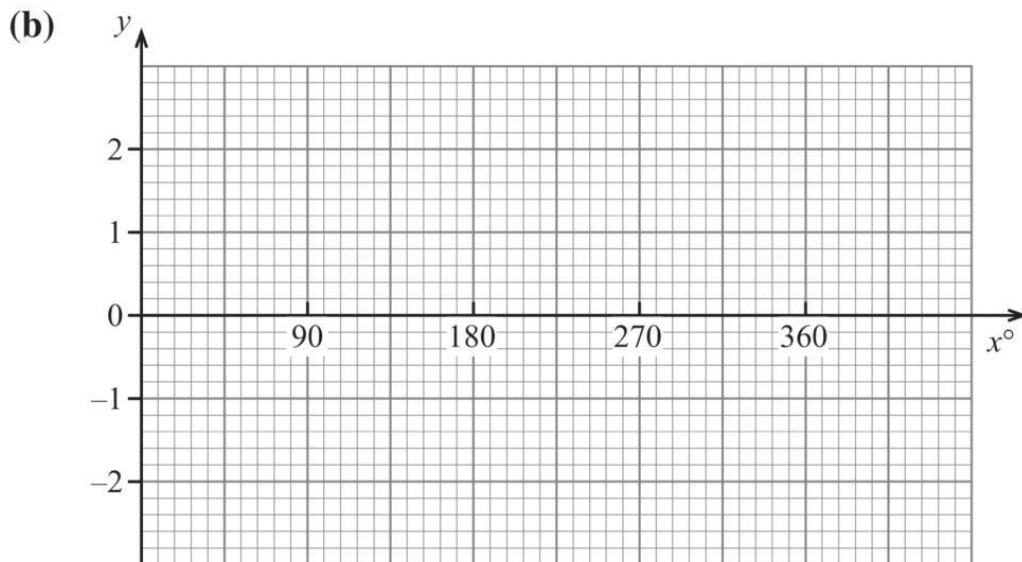3) **(a)** Given $\cos 60° = \frac{1}{2}$, find

(i) another angle, x, between $-180°$ and $180°$ for which $\cos x = \frac{1}{2}$

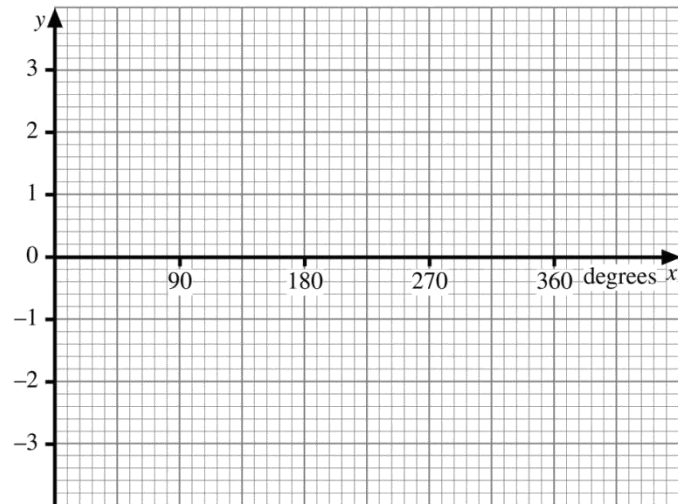Answer $x =$ _____° [1]

(ii) the value of $\cos 240°$.

Answer _____ [1]

(b)

On the grid above, sketch the graph of $y = \sin x$ from $0°$ to $360°$.　　[1]

4)(a)

On the axes above, sketch the graph of $y = \cos x$ for $0° \leqslant x \leqslant 360°$ [1]

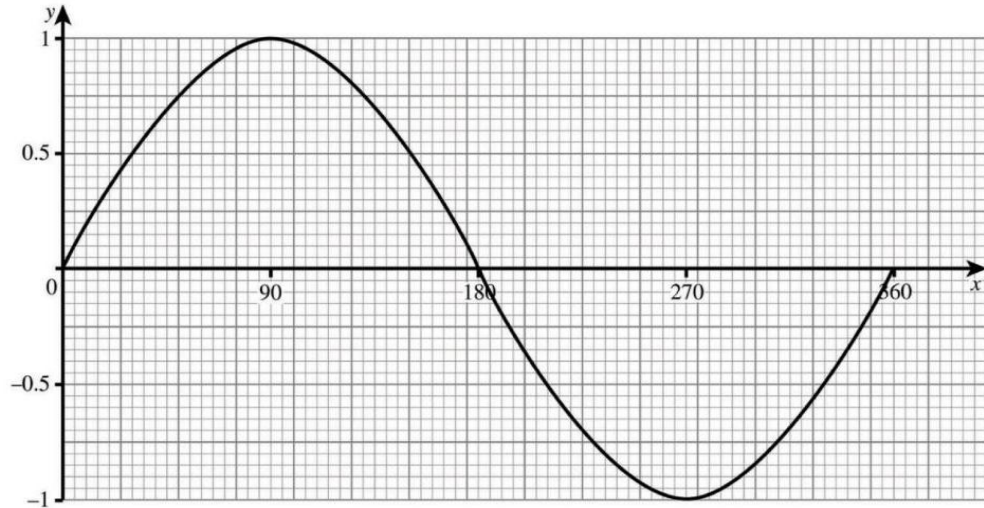(b) Given that tan 45° = 1, work out the value of tan 135°

Answer _____ [1]

5)

(a) Given that sin 30° = 0.5 write down the value of sin 210°

Answer _____ [1]

(b) Complete the blank with a different angle between 0° and 360°

cos _____ = cos 120°   [1]

6)

Using the graph of $y = \sin x$, find the solutions of the equations

(a) $\sin x = -0.45$

Answer $x =$ _____ [2]

(b) $3 \sin x = 2$

Answer $x =$ _____ [2]