

GCSE Mathematics

H

Trigonometric Equations

Higher Tier | Grades 8-9

Total Marks	Time	Questions
64	64 min	20

Instructions:

- Do not use a calculator when you see: 
- Answer all questions in the spaces provided.
- Show all your working - marks are awarded for method as well as final answers.
- Cross through any work you do not want to be marked.
- Check your answers if you have time at the end.

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Edexcel-style questions**Q1**

Grade 8

Edexcel style

Solve $\sin x^\circ = 0.6$ for $0 \leq x \leq 90^\circ$. Give your answer correct to 1 decimal place.

Answer _____

teachably

[2 marks]**Q2**

Grade 9

Edexcel style

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

Answer _____

teachably

[3 marks]**Q3**

Grade 9

Edexcel style

Solve $\tan x^\circ = -1.4$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer _____

teachably

[3 marks]

Q4

Grade 9

Edexcel style

Solve $2 \sin x^\circ = 1.4$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer

teachably

[4 marks]**Q5**

Grade 9

Edexcel style

The depth of water in a harbour, d metres, is modelled by $d = 6 + 3 \cos x^\circ$, where x° represents the time since high tide. Find the value of x ($0 \leq x \leq 360^\circ$) when the depth is first 8 m. Give your answer correct to 1 decimal place.

Answer

teachably

[4 marks]

AQA-style questions**Q6**

Grade 8

AQA style

Solve $\cos x^\circ = 0.45$ for $0 \leq x \leq 90^\circ$. Give your answer correct to 1 decimal place.

Answer

teachably

[2 marks]**Q7**

Grade 9

AQA style

Solve $\tan x^\circ = 1.8$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer

teachably

[3 marks]**Q8**

Grade 9

AQA style

Solve $\sin x^\circ = -0.4$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer

teachably

[3 marks]

Q9

Grade 9

AQA style

Solve $4 \cos x^\circ = 1.6$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer _____

teachably

[4 marks]

Q10

Grade 9

AQA style

The height, h metres, of a car on a Ferris wheel above the ground is modelled by $h = 20 + 18 \sin x^\circ$, where x° is the angle turned from the start. Find the value of x ($0 \leq x \leq 360^\circ$) when the height is first 30 m. Give your answer correct to 1 decimal place.

Answer _____

teachably

[4 marks]

OCR-style questions**Q11**

Grade 8

OCR style

Solve $\tan x^\circ = 2.1$ for $0 \leq x \leq 90^\circ$. Give your answer correct to 1 decimal place.

Answer

teachably

[2 marks]**Q12**

Grade 9

OCR style

Solve $\sin x^\circ = 0.75$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer

teachably

[3 marks]**Q13**

Grade 9

OCR style

Solve $\cos x^\circ = -0.42$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer

teachably

[3 marks]

Q14

Grade 9

OCR style

Solve $3 \tan x^\circ = 6.6$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer

teachably

[4 marks]**Q15**

Grade 9

OCR style

The temperature, $T^\circ\text{C}$, in a greenhouse over a 24-hour period is modelled by $T = 15 + 8 \cos x^\circ$, where x° represents the time of day. Find the value of x ($0 \leq x \leq 360^\circ$) when the temperature is first 20°C . Give your answer correct to 1 decimal place.

Answer

teachably

[4 marks]

Teachably-style questions**Q16**

Grade 8

Teachably style

Solve $\sin x^\circ = 0.85$ for $0 \leq x \leq 90^\circ$. Give your answer correct to 1 decimal place.

Answer

teachably

[2 marks]**Q17**

Grade 9

Teachably style

Solve $\cos x^\circ = 0.55$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer

teachably

[3 marks]**Q18**

Grade 9

Teachably style

Solve $\tan x^\circ = -2.5$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer

teachably

[3 marks]

Q19

Grade 9

Teachably style

Solve $4 \tan x^\circ = -9.2$ for $0 \leq x \leq 360^\circ$. Give your answers correct to 1 decimal place.

Answer _____

teachably

[4 marks]

Q20

Grade 9

Teachably style

The height, h metres, of the tide in a bay is modelled by $h = 5 + 2.5 \sin x^\circ$, where x° represents the time since midnight. Find the value of x ($0 \leq x \leq 360^\circ$) when the height is first 6.8 m. Give your answer correct to 1 decimal place.

Answer _____

teachably

[4 marks]

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