GCSE MATHEMATICS
AQA | Edexcel | OCR I WJEC

## Sine \& Cosine Rule (Mixed)

Please write clearly in block capitals

Forename:

Surname:

## Materials

For this paper you must have:

- mathematical instruments

You can use a calculator.

## Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.


## Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.


## Advice

- In all calculations, show clearly how you work out your answer.
$1 \quad$ Line $A B C$ is parallel to line $D E$.

$$
\begin{aligned}
& \angle D A E=13^{\circ} \\
& \angle E A C=31^{\circ} \\
& D E=B C=3 \mathrm{~cm}
\end{aligned}
$$



Find the length of $E C$
Give your answer to the nearest cm
Not drawn accurately
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
Answer $\qquad$ cm

2 Two triangles $C D B$ and $A D B$ are joined along $D B$, shown below.
$D C=6 \mathrm{~cm}$
$C B=7 \mathrm{~cm}$
$D B=5 \mathrm{~cm}$
$B A=x \mathrm{~cm}$
$\angle D A B=30^{\circ}$


Not drawn accurately

Find the value of $x$.
Give your answer to 1 decimal place.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
Answer $\qquad$ cm

## Turn over for next question

3 The tallest point of a building is given the letter $A$, shown below.
Points $B$ and $C$ are horizontal to the ground such that angle $A B C$ is $22^{\circ}$ and $A C B$ is $18^{\circ}$, shown below.


Given that the distance $B C=120 \mathrm{~m}$, calculate the height of the building to the nearest metre.
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$\qquad$
$\qquad$
Answer
m

Turn over for next question

4 Allan is building an enclosure in his garden.
It is in the shape of the quadrilateral below.
$A B=5.3 \mathrm{~m}$
$B C=6.4 \mathrm{~m}$
$B D=6.2 \mathrm{~m}$


Calculate the perimeter of the enclosure.
Give your answer to the nearest metre.
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$\qquad$
Answer $\qquad$
Turn over for next question

5 The quadrilateral $A B C D$, is made up of two triangle $A B D$ and $B C D$
$A B=5.1 \mathrm{~m}$
$A D=6.2 \mathrm{~m}$
$C D=7.9 \mathrm{~m}$


Find the angle $A D B$, shown on the diagram above.
Give your answer to 2 decimal places.
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$\qquad$
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$\qquad$
Answer $\qquad$

Turn over for next question

6 Sophia and Grace are travelling in their cars away from a crossroads at $O$ shown below.

Sophia is traveling to $D$ through point $A$
Grace is traveling to $E$, through point $B$
$A B=182.3 \mathrm{~m}$
$O A=170 \mathrm{~m}$
$A D=200 \mathrm{~m}$
$B E=300 \mathrm{~m}$
4 North


Not drawn accurately

6(a) Find the distance $D E$.
Give your answer to the nearest metre.
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
Answer $\qquad$

Question continues on the next page

6(b) $\quad$ Find the bearing of $E$ from $D$.
Give your answer to the nearest degree.
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$\qquad$
$\qquad$
$\qquad$
$\qquad$
Answer


## GCSE Maths Revision Guide

() GCSE Maths Course 9-1 Revision Guide
() Exam Questions Included
() All exam boards - AQA, OCR, Edexcel, WJEC
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