

Name

Class



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Trigonometry

(9 – 1) Topic booklet

HIGHER

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a **1F** question you are not allowed to use a calculator.
- If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

Information

- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

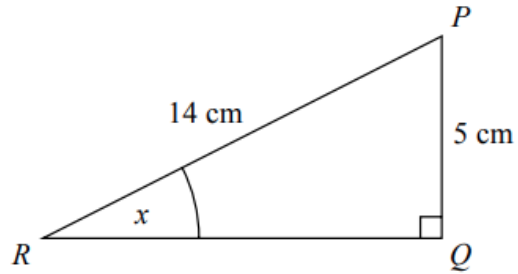
Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions

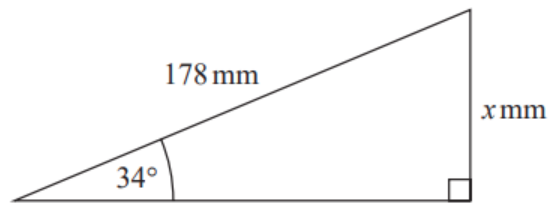
**Write your answers in the space provided.
You must write down all the stages in your working.**

2 PQR is a right-angled triangle.



Work out the size of the angle marked x .
Give your answer correct to 1 decimal place.

5

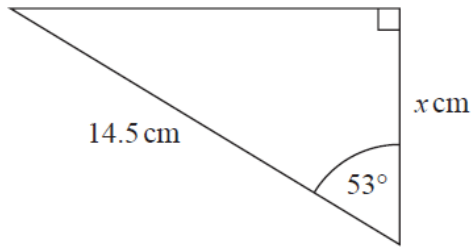


Work out the value of x .
Give your answer correct to 1 decimal place.

November 2020 – Paper 2H

(Total for Question 5 is 2 marks)

5



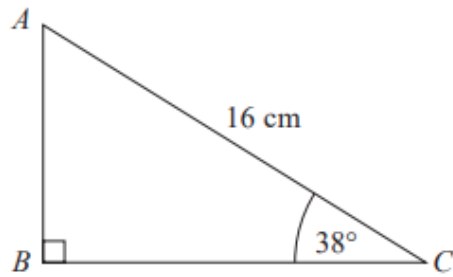
Work out the value of x .
Give your answer correct to 3 significant figures.

$x = \dots\dots\dots$

November 2022 – Paper 2H

(Total for Question 5 is 2 marks)

5 ABC is a right-angled triangle.



Calculate the length of AB .

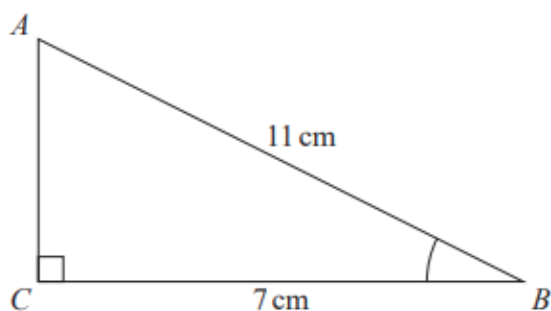
Give your answer correct to 2 decimal places.

.....cm

June 2019 – Paper 2H

(Total for Question 5 is 2 marks)

5 ABC is a right-angled triangle.



- (a) Work out the size of angle ABC .
Give your answer correct to 1 decimal place.

.....
(2)

The length of the side AB is reduced by 1 cm .

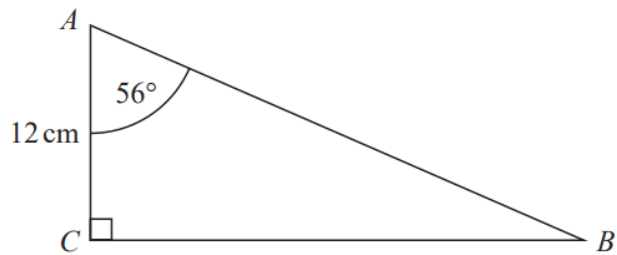
The length of the side BC is still 7 cm .

Angle ACB is still 90°

- (b) Will the value of $\cos ABC$ increase or decrease?
You must give a reason for your answer.

.....
(1)

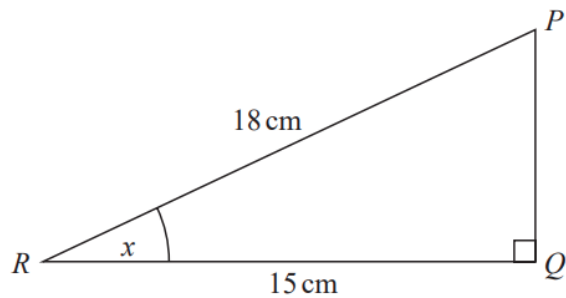
6 ABC is a right-angled triangle.



- (a) Work out the length of BC .
Give your answer correct to 1 decimal place.

..... cm
(2)

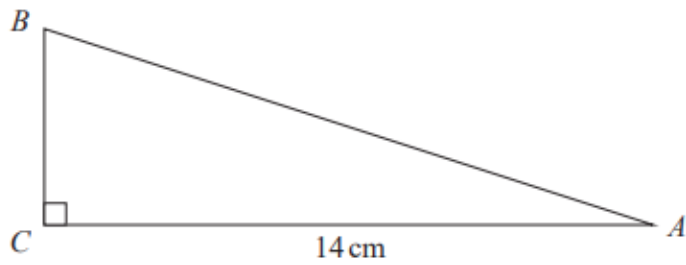
PQR is a right-angled triangle.



- (b) Work out the size of the angle marked x .
Give your answer correct to 1 decimal place.

.....
(2)

6 ABC is a right-angled triangle.



$AC = 14$ cm.

Angle $C = 90^\circ$

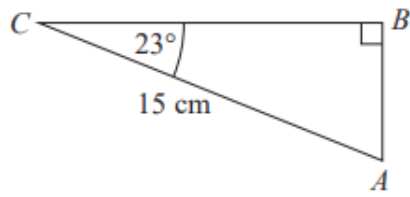
size of angle B : size of angle $A = 3 : 2$

Work out the length of AB .

Give your answer correct to 3 significant figures.

.....cm

7 ABC is a right-angled triangle.



Calculate the length of AB .

Give your answer correct to 3 significant figures.

..... cm

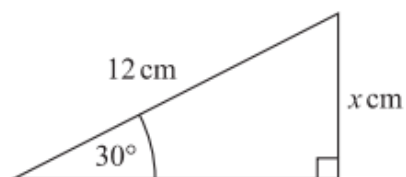
June 2017 – Paper 3H

(Total for Question 7 is 2 marks)

7 (a) Write down the exact value of $\cos 30^\circ$

.....
(1)

(b)



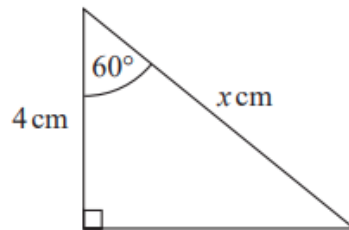
Given that $\sin 30^\circ = 0.5$,
work out the value of x .

.....
(2)

8 (a) Write down the exact value of $\tan 45^\circ$

.....
(1)

Here is a right-angled triangle.

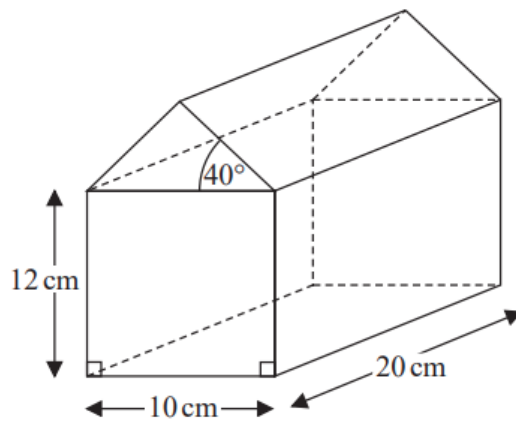


$$\cos 60^\circ = 0.5$$

(b) Work out the value of x .

.....
(2)

9 The diagram shows a prism.



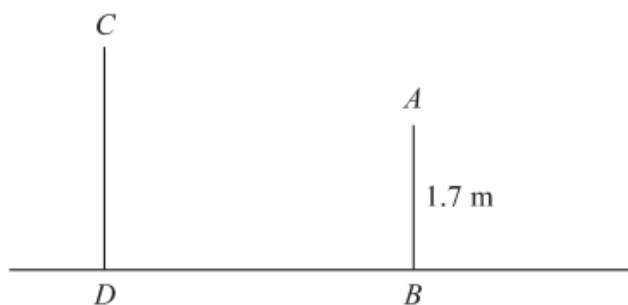
The cross section of the prism has exactly one line of symmetry.

Work out the volume of the prism.

Give your answer correct to 3 significant figures.

..... cm³

9 The diagram shows two vertical posts, AB and CD , on horizontal ground.



$$AB = 1.7 \text{ m}$$

$$CD : AB = 1.5 : 1$$

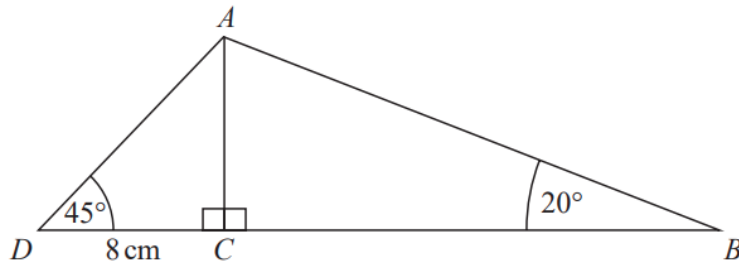
The angle of elevation of C from A is 52°

Calculate the length of BD .

Give your answer correct to 3 significant figures.

.....m

12 ABC and ACD are right-angled triangles.



$$DC = 8 \text{ cm}$$

$$\text{Angle } ADC = 45^\circ$$

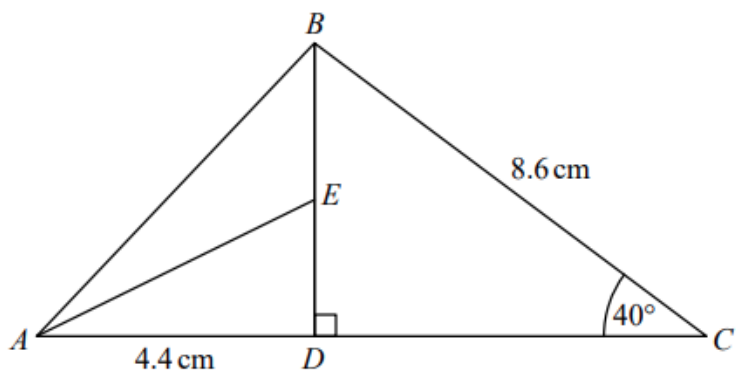
$$\text{Angle } ABC = 20^\circ$$

Work out the length of AB .

Give your answer correct to 3 significant figures.

..... cm

12 The diagram shows triangle ABC .



ADC and DEB are straight lines.

$$AD = 4.4 \text{ cm}$$

$$BC = 8.6 \text{ cm}$$

E is the midpoint of DB .

$$\text{Angle } CDB = 90^\circ$$

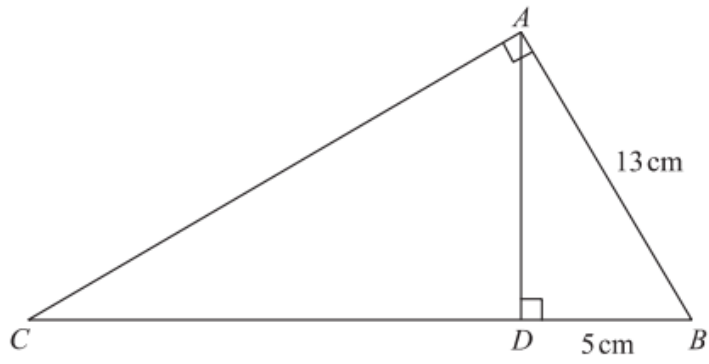
$$\text{Angle } DCB = 40^\circ$$

Work out the size of angle EAD .

Give your answer correct to 1 decimal place.

You must show all your working.

14 ABC and ABD are two right-angled triangles.



Angle $BAC = \text{angle } ADB = 90^\circ$

$AB = 13 \text{ cm}$

$DB = 5 \text{ cm}$

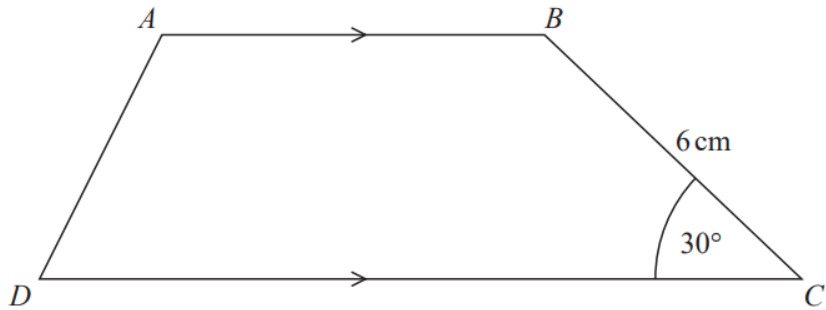
Work out the length of CB .

..... cm

Specimen 1 – Paper 2H

(Total for Question 14 is 3 marks)

18 Here is trapezium $ABCD$.

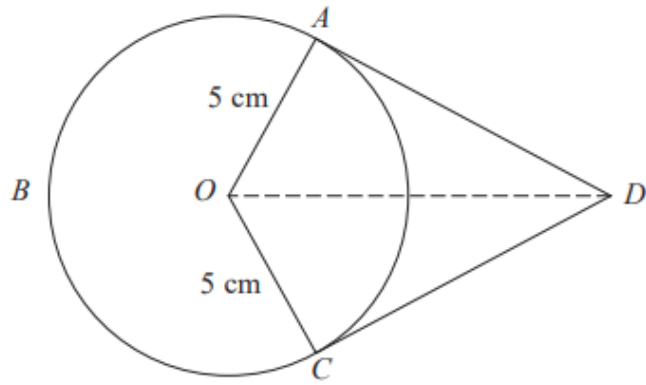


The area of the trapezium is 66 cm^2

the length of AB : the length of $CD = 2 : 3$

Find the length of AB .

..... cm



A , B and C are points on a circle of radius 5 cm, centre O .
 DA and DC are tangents to the circle.
 $DO = 9$ cm

Work out the length of arc ABC .
 Give your answer correct to 3 significant figures.

..... cm