FluidMaths

GCSE Mathematics (Grade 9-1)

Problem Solving
Trig Set 4
The sine rule
Questions

Some useful strategies in problem-solving

- Read the question carefully
- Sketch a diagram where applicable
- Take note of key information
- Write down any formulae you may need
- Tackle the problem in bite-size rather than as a whole
- Concentrate on the part of the problem you understand and start from there
- Collaborate with a partner and share ideas
- Use a dictionary to find the meaning of any confusing words
- Check that your answers make sense in the context of the question

1 ABCD is a trapezium.
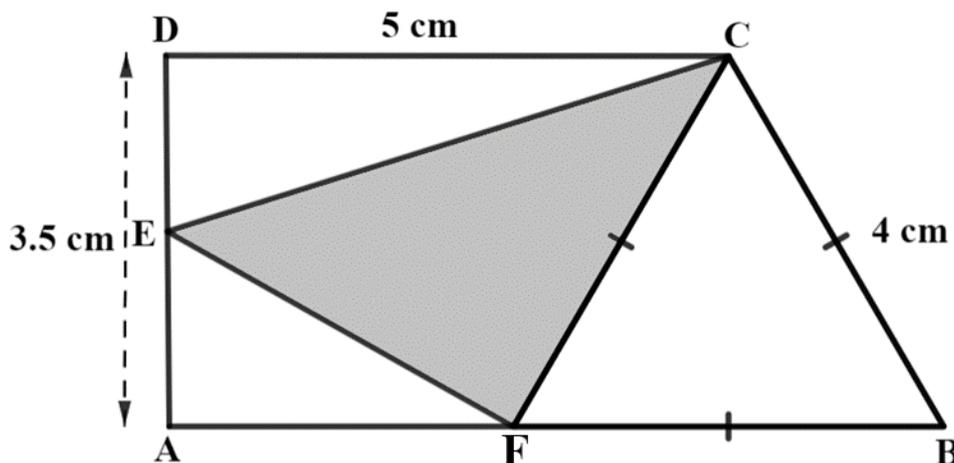
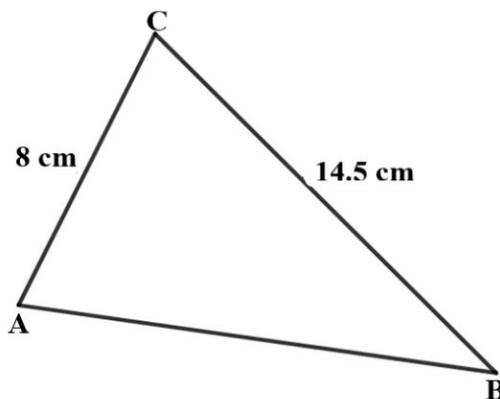FBC is an equilateral triangle of side 4cm.
AD = 3.5 cm
CD = 5 cm
E is the midpoint on AD.
Calculate the area of triangle CEF
Give your answer to 2 decimal places.
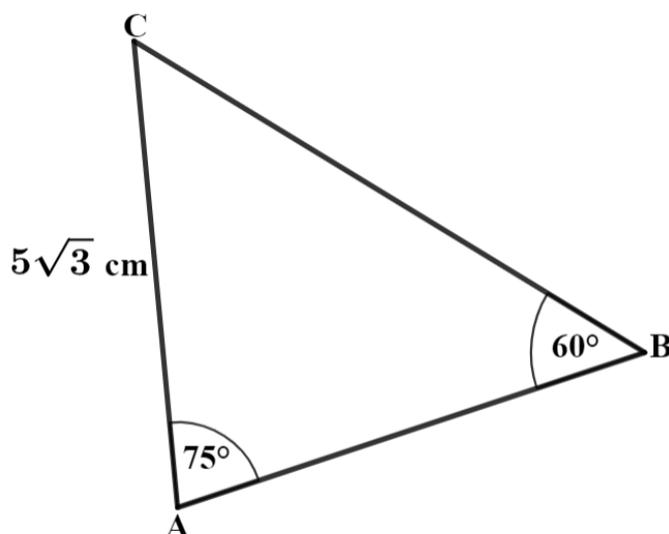
[5marks]

2 Here is triangle ABC

AC = 8 cm
BC = 14.5 cm
The area of the triangle is 52.5 cm²
Calculate the size of angle ACB to the nearest degree

[4marks]

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3 Triangle ABC is shown below

AC = $5\sqrt{3}$ cm
Angle CAB = 75°
Angle ABC = 60°
Calculate the AB
Give your answer as a surd.

[5marks]

4 Here is triangle ABC
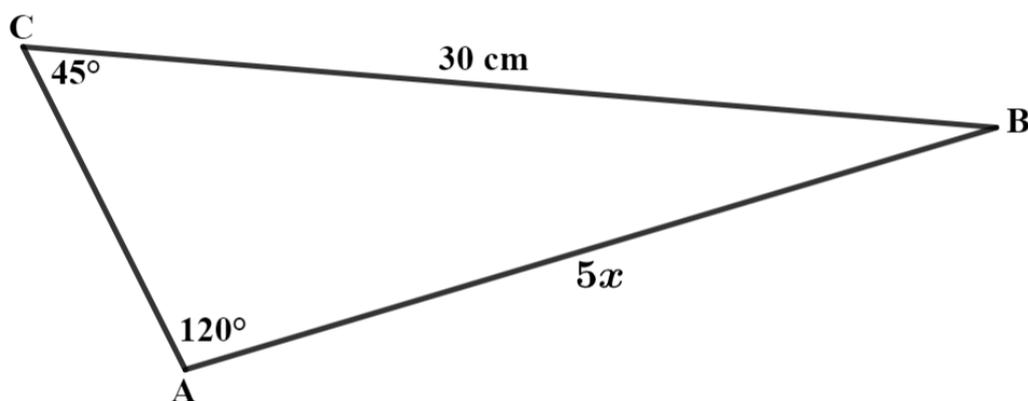
AB = $5x$
BC = 30 cm
Angle CAB = 120°
Angle BCA = 45°
Show that $x = 2\sqrt{6}$ **[4marks]**

5 ABCD is a parallelogram
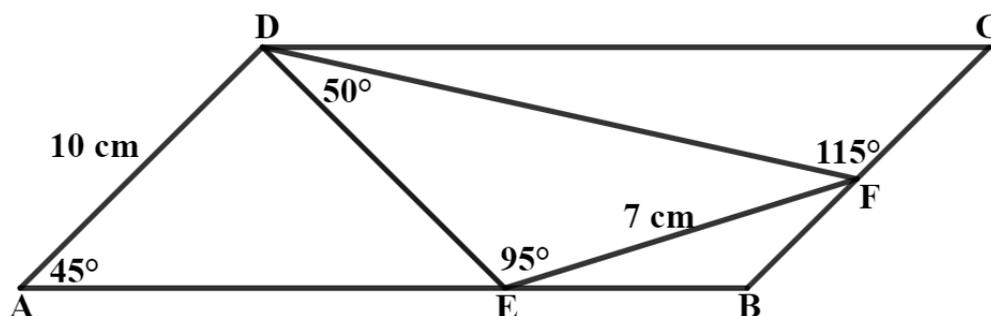
AD = 10 cm
EF = 7 cm
Angle DAE = 45°
Angle DEF = 95°
Angle DFC = 115°
Angle EDF = 50°

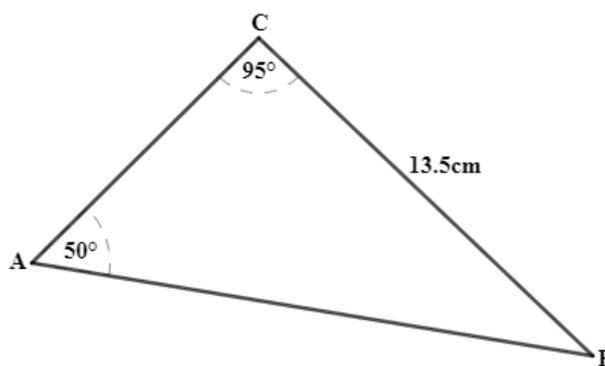a) Show that the height of the parallelogram is $5\sqrt{2}$
[2marks]
b)   Calculate the area of the parallelogram
    Give your answer to 3 significant figures.   **[4marks]**

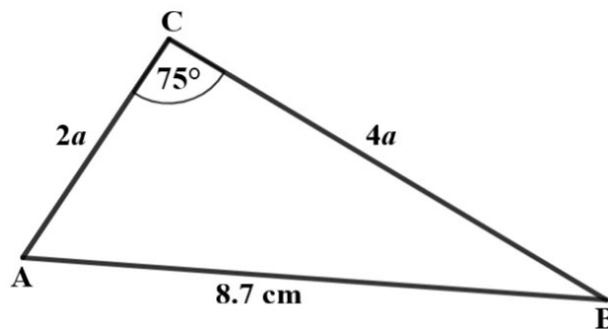**6** Triangle ABC is shown below

BC = 13.5 cm
Angle ACB = 95°
Angle CAB = 50°
Calculate the perimeter of the triangle
Give your answer to 3 significant figures.   **[5marks]**

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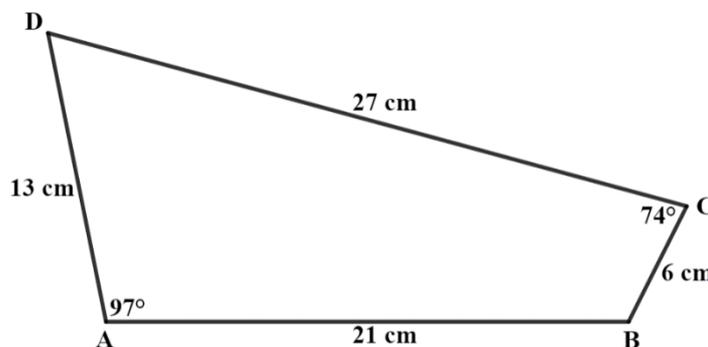**6** Triangle ABC is shown below

AB = 8.7 cm
Angle ACB = 75°
AC = 2a
BC = 4a
Given that the area of the triangle is 23.2 cm²,
calculate the perimeter of the triangle.
Give your answer to 1 decimal place.   **[4marks]**

8 ABCD is a quadrilateral

AB = 21 cm
AD = 13 cm
CD = 27 cm
BC = 6 cm
Angle BAD = 97°
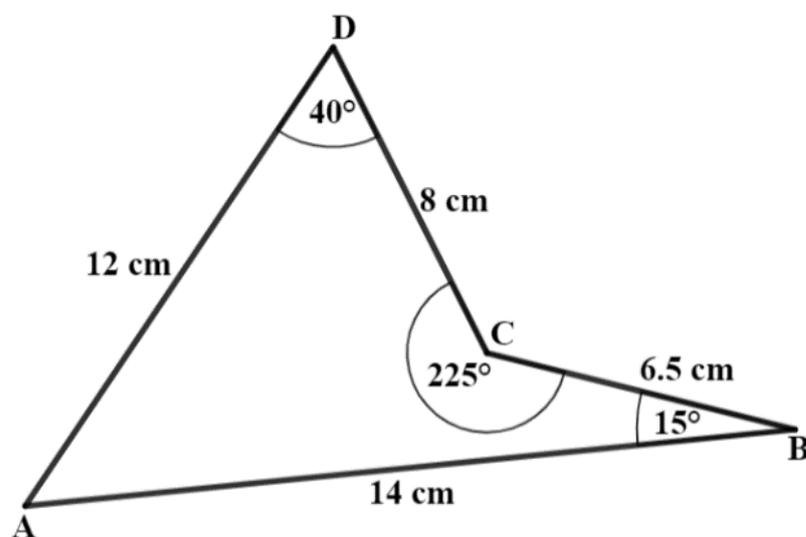Angle BCD = 74°
Given that BD = 26 cm,
What is the area of the quadrilateral to 3 significant figures?
[4marks]

9 ABCD is a quadrilateral

The reflex angle BCD = 225°
Calculate the area of the quadrilateral
Give your answer to 1 decimal place.

[5marks]