4 $\sin(A + B) = \sin A \cos B + \sin B \cos A$

$$\tan A = \frac{\sin A}{\cos A}$$

(a) Show that the equation $a \sin(x - 30)° = b \sin(x + 30)°$

can be written in the form $\tan x° = \dfrac{a + b}{\sqrt{3}(a - b)}$

(5)

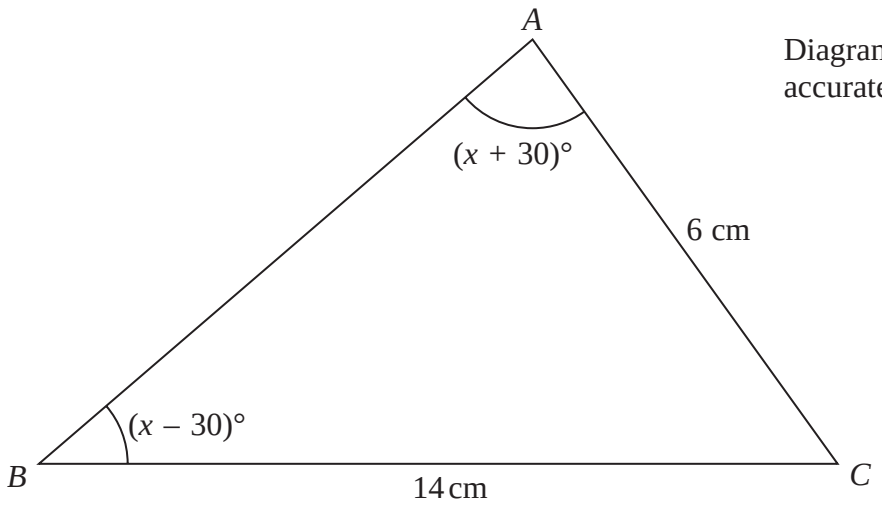

Diagram **NOT** accurately drawn

Figure 2

In triangle ABC, $AC = 6$ cm, $BC = 14$ cm, $\angle ABC = (x - 30)°$ and $\angle BAC = (x + 30)°$ as shown in Figure 2.

(b) Find, in degrees to 1 decimal place, the size of $\angle ACB$.

(4)

(c) Find, to 3 significant figures, the area of triangle ABC.

(2)

Question 4 continued

Question 4 continued

Question 4 continued

(Total for Question 4 is 11 marks)