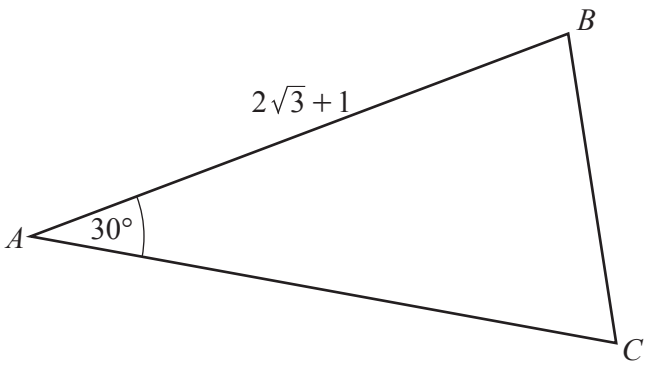
8 DO NOT USE A CALCULATOR IN THIS QUESTION.

In this question lengths are in centimetres.



You may use the following trigonometric ratios.

$\sin 30° = \frac{1}{2}$

$\cos 30° = \frac{\sqrt{3}}{2}$

$\tan 30° = \frac{1}{\sqrt{3}}$

(a) Given that the area of the triangle ABC is $5.5\,\text{cm}^2$, find the exact length of AC. Write your answer in the form $a + b\sqrt{3}$, where a and b are integers. [4]

(b) Show that $BC^2 = c + d\sqrt{3}$, where c and d are integers to be found. [4]