12.2 The law of sines **HSG.SRT.D.11**

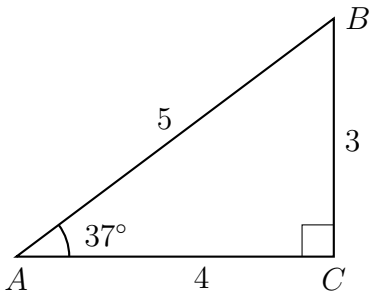
Formulas

Sine rule: $\dfrac{a}{\sin A} = \dfrac{b}{\sin B}$

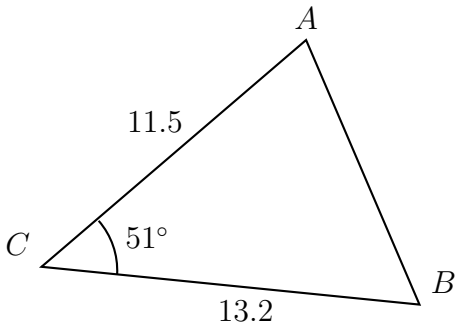
Area of a right triangle: $A = \dfrac{1}{2}(bh)$, where b is the base, h is the height

Area of any triangle: $A = \dfrac{1}{2}ab\sin C$

1. Find the area of right $\triangle ABC$ shown below.

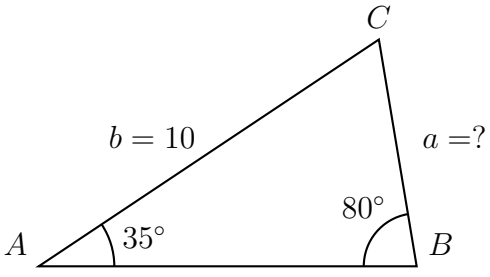


2. Find the area of the given triangle.



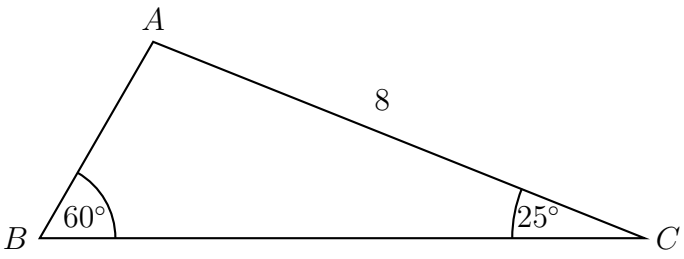
3. (a) Substitute given values into the Sine rule.

   (b) Solve for the missing length a.



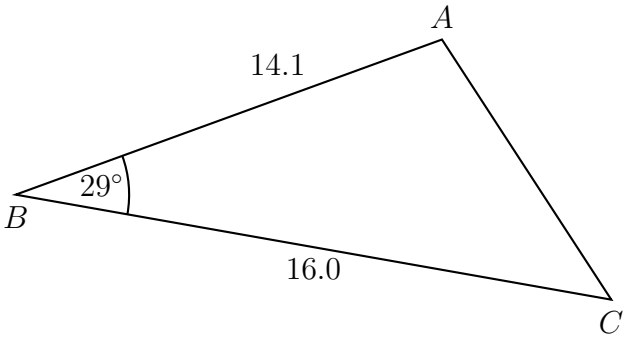
4. The following diagram shows triangle ABC, with $A\hat{B}C = 60°$, $A\hat{C}B = 25°$, and $AC = 8$ cm.

   Find AB. *diagram not to scale*



5. As shown in the diagram, triangle ABC has $A\hat{B}C = 29°$, $AB = 14.1$, and $BC = 16.0$.

   Find the area of the triangle. *diagram not to scale*



6. The following diagram shows triangle ABC, with $A\hat{B}C = 48°$, $A\hat{C}B = 37°$, and $AB = 11.5$ cm.

   Find AC. *diagram not to scale*