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

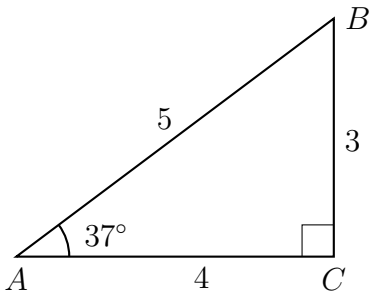
Formulas

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

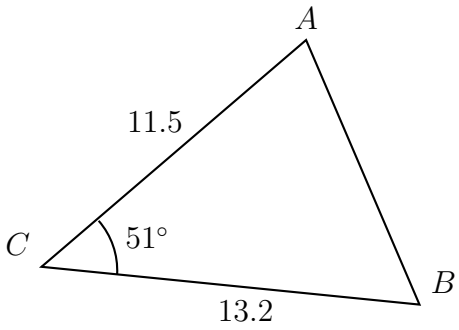
Area of a right triangle: $A = \dfrac{1}{2}(bh)$, where b is the base, h is the height

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

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

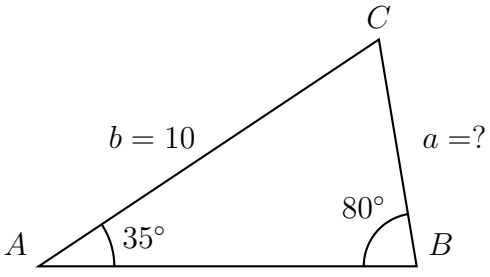


2. Find the area of the given triangle.

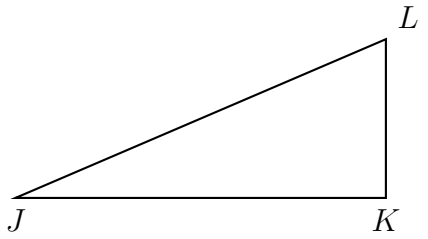


3. (a) Substitute given values into the Sine rule.

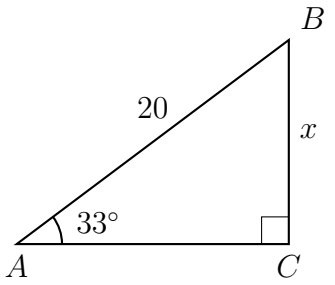
   (b) Solve for the missing length a.



4. Given right $\triangle JKL$ with $\overline{JK} \perp \overline{KL}$, $JL = 12.4$, $m\angle J = 41°$. Find the length JK, *rounded to the nearest hundredth.*



5. Right triangle ABC is shown with $AB = 20$, $m\angle A = 33°$. Find the value of $BC = x$.



6. Express the result to *the nearest thousandth.*

   (a) $\sin 32° =$

   (b) $\cos 29° =$

   (c) $\cos 58° =$

   (d) $\sin 61° =$

7. Express the result to *the nearest whole degree.*

   (a) $\sin^{-1} 0.420 =$

   (b) $\cos^{-1} 0.675 =$

   (c) $\cos^{-1} 0.850 =$

   (d) $\sin^{-1} 0.125 =$