Unit 10: Trigonometry Name:
4 April 2022

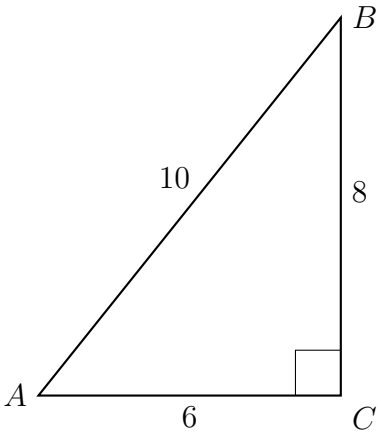
10.1 Sine and Cosine functions

1. Right triangle $\triangle ABC$ is shown with side lengths marked. Identify the sides.

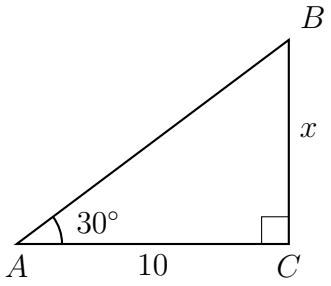
   (a) Which length is the hypotenuse?

   (b) Which length is *opposite* angle A?

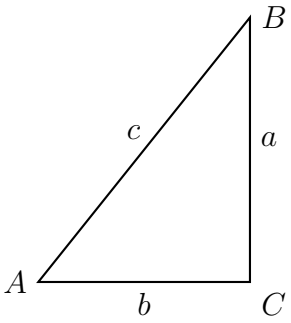
   (c) Which length is *adjacent* to angle A?



2. Use the tangent function to find the value of $BC = x$ for $\triangle ABC$ as shown.



3. $\triangle ABC$ is shown with $m\angle C = 90°$. The lengths of the triangle's sides are a, b, and c. Express each trigonometric ratio as a fraction of two variables.

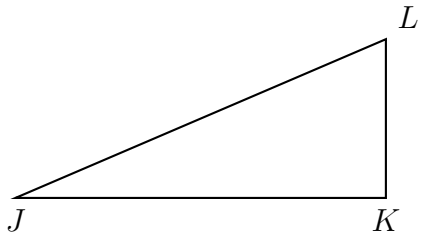


   (a) $\sin B =$

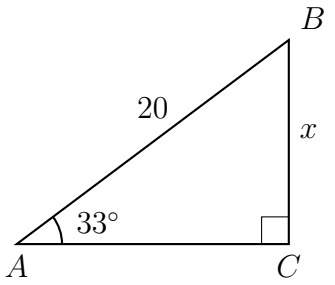
   (b) $\cos B =$

   (c) $\tan B =$

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