6.8 Classwork: Tangent function, trigonometric ratios

Show each step, justify each by writing the name of a theorem to the right.

1. Express the result to the nearest thousandth.

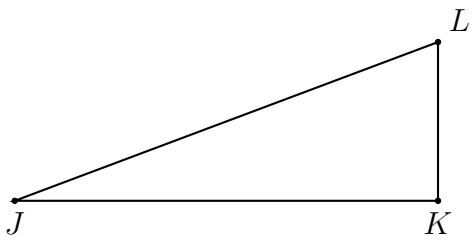
   (a) $\tan 60° =$

   (b) $\tan 67° =$

   (c) $\tan 23° =$

   (d) $\tan 45° =$

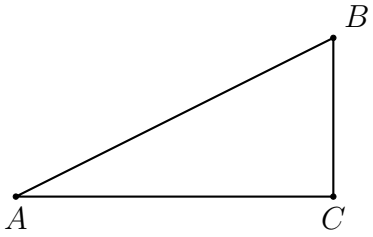
2. Given right $\triangle JKL$ with $\overline{JK} \perp \overline{KL}$, $JK = 7$, $m\angle J = 20°$.



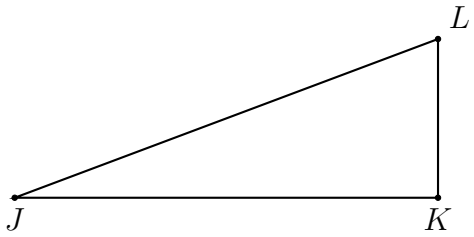
   (a) Use the tangent function to find the length KL

   (b) Use the Pythagorean formula to find the length JL

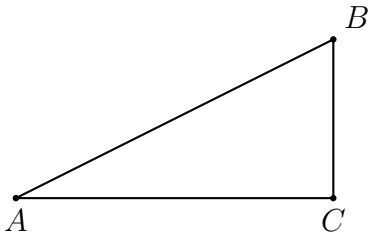
3. Given right $\triangle ABC$ with $AC = 6, BC = 2.8$, $m\angle C = 90°$. Find the value of $m\angle A$, expressed as a decimal to the nearest thousandth.



4. Given right $\triangle JKL$ with $\overline{JK} \perp \overline{KL}$, $JK = 7$, $m\angle J = 20°$. Find the length KL.



5. Given right $\triangle ABC$ with $AC = 10, BC = 4$, $m\angle C = 90°$. Find the value of $m\angle A$, expressed as a decimal to the nearest thousandth.



6. Spicy: Given a rectangle with area 35, width x, and length $x + 2$.

   (a) Find x.

   (b) Find the perimeter of the rectangle.