

**6.8 Homework: Tangent function, trigonometric ratios**

1. Express the result to the nearest thousandth.

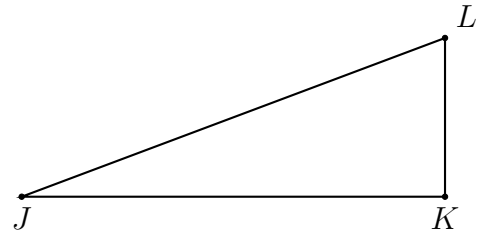
(a)  $\tan 60^\circ =$

(c)  $\tan 23^\circ =$

(b)  $\tan 67^\circ =$

(d)  $\tan 45^\circ =$

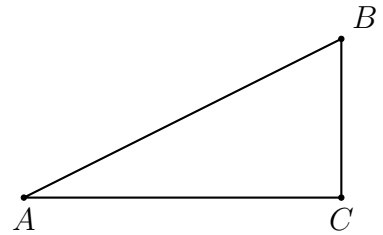
2. Given right  $\triangle JKL$  with  $\overline{JK} \perp \overline{KL}$ ,  $JK = 7$ ,  $m\angle J = 20^\circ$ .



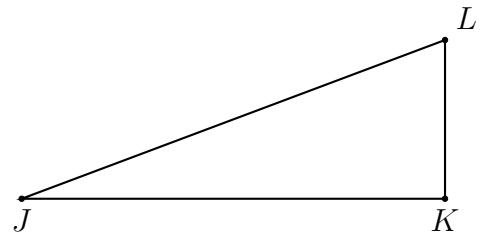
- (a) Use the tangent function to find the length  $KL$

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

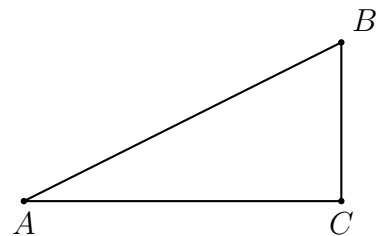
3. Given right  $\triangle ABC$  with  $AC = 6$ ,  $BC = 2.8$ ,  $m\angle C = 90^\circ$ . Find the value of  $m\angle A$ , expressed as a decimal to the nearest thousandth.



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



5. Given right  $\triangle ABC$  with  $AC = 10$ ,  $BC = 4$ ,  $m\angle C = 90^\circ$ . 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.