The Six Trigonometric Functions

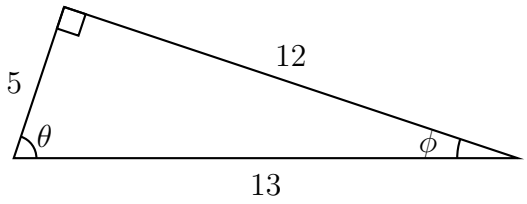
1. Insert the correct sign, $\boxed{+}$ or $\boxed{-}$ into the boxes below.

   - $\sin(-\theta) = \square \sin(\theta)$
   - $\cos(-\theta) = \square \cos(\theta)$
   - $\tan(-\theta) = \square \tan(\theta)$
   - $\sec(-\theta) = \square \sec(\theta)$
   - $\csc(-\theta) = \square \csc(\theta)$
   - $\cot(-\theta) = \square \cot(\theta)$

2. Give values of the trigonometric functions below.
   Use reference angles and knowledge of even/odd trig function symmetry.

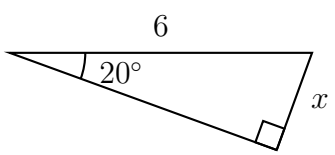
   - $\sec\left(\frac{\pi}{6}\right) = \square$ $\quad \sec\left(\frac{7\pi}{6}\right) = \square$ $\quad \sec\left(\frac{-5\pi}{6}\right) = \square$
   - $\tan\left(\frac{\pi}{3}\right) = \square$ $\quad \tan\left(\frac{2\pi}{3}\right) = \square$ $\quad \tan\left(\frac{-4\pi}{3}\right) = \square$

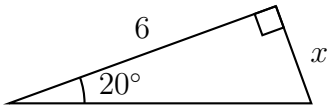
3. Give values of the indicated functions using measures from the triangle to the right.

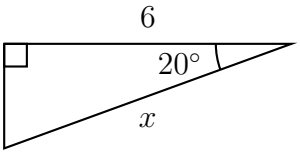


   - $\sin(\theta) = \square$
   - $\tan(\theta) = \square$
   - $\sec(\theta) = \square$
   - $\cos(\phi) = \square$
   - $\tan(\phi) = \square$
   - $\sec(\phi) = \square$

4. Use trigonometric functions to express the edge length x in each of the triangles below. Pay attention to the changing position of the right angle and hypotenuse!







5. Draw a reference triangle in the correct quadrant and compute side lengths to convert between trigonometric functions.

- If $\sin(\theta) = -\frac{1}{3}$ in QIII, then find $\tan(\theta)$.

- If $\sec(\theta) = \frac{5}{2}$ in QIV, then find $\sin(\theta)$.

- If $\tan(\theta) = -4$ in QII, then find $\cos(\theta)$.