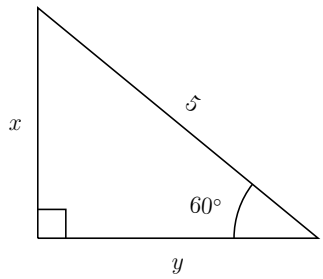
1. Approximate each of the following correct to the ten-thousandths place.

   (a) $\csc\left(\frac{4\pi}{5}\right)$ (c) $\cos\left(-\frac{49\pi}{50}\right)$ (e) $\cot\left(\frac{7\pi}{12}\right)$

   (b) $\tan(-12°4'51'')$ (d) $\sec(14°12'')$ (f) $\sin(19°)$

2. Find the exact values of x and y in the triangle.



3. Find the exact value of each of the following. (Continued on the next page.)

   (a) $\cot\left(\frac{4\pi}{3}\right)$ (c) $\sin\left(\frac{21\pi}{4}\right)$

   (b) $\sec(270°)$ (d) $\tan\left(\frac{\pi}{3}\right)$

(e) $\cos\left(\frac{5\pi}{3}\right)$

(g) $\csc\left(\frac{11\pi}{6}\right)$

(f) $\sin(315°)$

(h) $\cos(150°)$

4. Find the exact value of each of the following.

(a) $\tan^{-1}(1)$

(e) $\sin^{-1}(1)$

(b) $\tan^{-1}\left(-\frac{1}{\sqrt{3}}\right)$

(f) $\sin^{-1}\left(-\frac{1}{2}\right)$

(c) $\tan^{-1}(0)$

(g) $\cos^{-1}(0)$

(d) $\cos^{-1}\left(\frac{1}{\sqrt{2}}\right)$

(h) $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

5. Simplify the following as much as possible.

   (a) $\tan^2(3\beta) - \dfrac{1}{\cos^2(3\beta)}$

   (b) $\sqrt{1-\cos^2(\theta)}$ for θ in quadrant III

6. Give the exact value of the solutions to the following equations in the interval $[0, 2\pi)$.

   (a) $\sec(x) = 2$

   (b) $\cos(\theta) = -\dfrac{\sqrt{3}}{2}$

   (c) $\tan(3\beta) = \sqrt{3}$

7. Approximate to six decimals places the solutions to the following equations in the interval $[0, 2\pi)$.

   (a) $\sec(\alpha) = -4.3$

   (b) $\sin(\beta) = -\dfrac{2}{3}$

   (c) $\csc(\theta) = \dfrac{7}{5}$

8. Find all solutions to the following equations. Give the exact answers.

   (a) $\sec\left(4x - \frac{\pi}{6}\right) = 2$

   (b) $3\cos^2(x) - \cos(x) - 4 = 0$

9. Verify the following identities.

   (a) $\cot(t) + \tan(t) = \csc(t)\sec(t)$

   (b) $\cos^2(2t)\left(\sec^2(2t) - 1\right) = \sin^2(2t)$