

1. [72 points total, 8 points for each part] A correct final answer here will receive full credit provided that the answer is *completely* correct (i.e., with no sign error or any other error) even if no work is shown. Any error will result in 0 points in each part unless coherent, relevant work and/or explanation is shown. Find the *exact* value of each of the following. Do *not* approximate irrational numbers. Place your final answer in the answer line to the right of the question. This is the only final answer that will be graded.

(a) $\sec 2\pi$

(a) _____

(b) $\text{Arcsin}(-1)$

(b) _____

(c) $\tan\left(-\frac{7\pi}{4}\right)$

(c) _____

(d) $12 \cot\left(\frac{\pi}{2}\right) - 7\pi$

(d) _____

Question 1 continued. Directions are on the previous page.

(e) $\sin^2\left(-\frac{2\pi}{3}\right) + \cos^2\left(-\frac{2\pi}{3}\right)$

(e) _____

(f) $\cot\left(\operatorname{Arccos}\left(-\frac{1}{3}\right)\right)$

(f) _____

(g) $\operatorname{Arccos}(\tan \pi)$

(g) _____

(h) $\tan(390^\circ)$

(h) _____

(i) $\csc\left(\frac{5\pi}{3}\right)$

(i) _____

2. [8 points] Graph one cycle of

$$f(x) = 26\pi \cos\left(\frac{3}{4}x\right)$$

on a *scaled* set of axes.

3. [10 points] Solve the following equation for x where $0 \leq x < 2\pi$.

$$\csc^2 x = 4$$

4. [10 points] Find all solutions (i.e., find the general solution) to the equation below:

$$\cos(3x) = -1$$